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USSR REPORT

TRANSPORTATION

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CIVIL AVIATION

OFFICIAL ON CHANGES IN NEW CIVIL FLIGHT OPERATIONS MANUAL

Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 8, Aug 86 pp 26-27

[Article by V. Potemkin, chief of the Flight Service Administration of the Ministry of Civil Aviation and Honored Pilot of the USSR, under the rubric "Items of Flight Safety": "Developed from Flight Experience"]

[Text] Strict observance of the requirements of documents regulating the organization and conduct of flights plays a decisive role in ensuring the reliability of every flight. The USSR Civil Aviation Flight Operations Manual (NPP GA-85) is the key one. Brought into force on 1 December 1985, it embodies the basic directives of the Air Code of the USSR, the Statute on Use of the Airspace of the USSR, the Basic Rules for Flights in USSR Airspace, ICAO [International Civil Aviation Organization] Standards and Recommendations, and other normative documents.

The increased requirements of the Communist Party and the Soviet Government for improved flight efficiency, safety and regularity and for implementation of all the increasing tasks being handled by Aeroflot have been realized most completely in the new Flight Operations Manual.

Civil aviation today is one of the most dynamic sectors of the national economy. Annual transport volume has already exceeded 100 million passengers and more than 3 million tons of freight and mail. Aviators' contribution to solution of large-scale national economic problems continues to increase. More than 100 types of specialized operations are being carried out in accordance with the orders of various ministries and departments. More and more complex aircraft, which require thorough specialized training and particular accuracy and discipline to operate, are making their appearance on Aeroflot routes. Under these conditions, a thoroughly evaluated and scientifically substantiated summary of flight laws and rules is necessary to enable us to regulate all processes of organizing and conducting flights. The NPP GA-85 is a summary of these very laws and rules.

Aircraft commanders and managers of flight subunits, air traffic control service specialists, employees of pilot and navigator departments, the GosNII GA [State Scientific Research Institute of Civil Aviation], the Academy of Civil Aviation and other VUZes in the sector, and representatives of departments concerned took an active part in developing the new Flight

Operations Manual. This document has organically incorporated the most progressive of everything accumulated over many years of domestic and international aviation science and practice.

For example, without unambiguity, precision and specificity in flight terminology, thorough analysis of the condition of flight safety, and hence the adoption of effective measures to prevent violations of regulatory documents, is impossible now. The automated method of processing data on aviation accidents and their causes is especially impossible. For this reason, considerable attention has been devoted in the new Flight Operations Manual to aviation terminology and its conformity with international standards and requirements of the Air Code of the USSR.

The first chapter, which is devoted to this problem, has been expanded significantly, and many definitions have been modified or made more precise. Thus interpretation of the basic term "flight safety" has been improved, and now reads: "Flight safety--the overall characteristics of air transport and aviation operations which determine the capability of conducting flights without threat to the life and health of people."

The term "airport," which previously was considered as an enterprise, also underwent a change. It is now interpreted as a complex of structures intended for receiving and dispatching aircraft and servicing air transport which has an airfield, an air terminal, and other ground structures, as well as the necessary equipment, for this purpose.

Instructor pilots, who now serve in the capacity of examiners in the crew for its checkout or training, have been included together with flight command and inspector personnel in the definition of the term "examiner."

Definitions such as "wind shear," "aircraft minimum," "dangerous proximity," "landing distance," "instrument weather conditions," "transition level" and others have also received new wording.

Important qualitative additions also were made to the third chapter of the manual, "Organization of Flying Activity." Sections such as "Planning Flying Activity," "Training Cockpit Personnel," and "Organizing Aircrews" have made their appearance in it. Particular importance is attached to the sections "Flight Critique" and "Flight Methods Work."

Flight operations support is exceptionally important in increasing the efficiency and safety of air transport and flight operations. It is carried out in strict conformity with the requirements of the Air Code of the USSR, the Statute on Use of the Airspace, the Basic Rules for Flights in USSR Airspace, and other formal normative documents. It is not coincidental that the fourth chapter of the NPP GA-85 is devoted entirely to this problem. At the same time, particular attention is devoted in it to the organization of political-education work in aviation collectives to ensure flight safety, which has acquired new substantive content in connection with the creation of political organs in civil aviation. The fourth chapter also explains the nature of navigation, meteorological, lighting, radio engineering, bird activity and other aspects of flight operations support for aircraft.

Subsequent chapters also were amplified substantially. As an example, in the sixth chapter, "Air Traffic Control," the problems of organizing air traffic and improving the quality of traffic control with alternative flight profiles are set forth more specifically.

In contrast to the NPP GA-78, the eighth chapter contains the voluminous section "Special Situations in Flight." The ninth chapter, "International Flights," also is larger.

Taking into account the extended scope of civil aviation's application in the national economy, new sections also were added to the 10th chapter. The responsibility of ground services for flight preparation, organization and support also was increased.

Consequently, the new Flight Operations Manual regulates the efficient organization of flying activity, which has been called upon to completely eliminate aviation accidents through the fault of personnel and their causes and to ensure the high safety and regularity of each flight. But this is possible only if all aviation employees who support and conduct flights, without exception, are profoundly imbued with the meaning of its requirements and will persistently struggle to implement them. In other words, if they learn to follow the letter and spirit of this important summary of flight laws and rules strictly and unfailingly.

It is difficult to overemphasize the role of aircraft commanders in this matter. After all, the success of each flight depends entirely on how competently and skillfully they organize execution of the flight mission, how training and education has been organized in the crew, and what kind of moral atmosphere has been established in the collective. The result of any flight depends on the crew's attitude on the flight and the extent of the complexity and responsibility of the tasks with which it has been entrusted. And vice versa, if the commander shows even the slightest negligence toward the organization and conduct of the flight, or if he permits even a minor violation of flight laws and rules, you can expect trouble here.

The statement by Minister of Civil Aviation B. P. Bugayev at a recent conference of aircraft commanders that the crew commander is entrusted with the highest responsibility for ensuring flight safety is especially important. The commander has a special trust, but a special demand is placed on him as well.

A great deal is being done in our sector at present to inculcate in aircraft commanders a spirit of high responsibility for the work assigned and a state approach to observance of the requirements of the manual and other documents which regulate flying activity. The overwhelming majority of commanders are ideologically mature specialists who know their job and are capable of acting competently, promptly and decisively in any unexpected situations. Many of them have higher engineering training. Among them may be included Sh. A. Kalambayev, commander of an Il-62 from the Alma-Ata Aviation Enterprise, and R. G. Melkonyan, instructor pilot in the Yerevan Aviation Enterprise, who fittingly presented a famous pleiad of aviation workers at the 27th CPSU

Congress; V. N. Pozdeyev, helicopter commander from Naryan-Mar; I. Ya. Berdyugin from Tyumen, V. P. Bogatov from Leningrad, and A. S. Kaledin from the Vnukovo Production Association, aircraft commanders and Honored Pilots of the USSR; and many others.

At the same time, unfortunately, there are instances, though isolated ones, when the NPP requirements are violated. You cannot call such an attitude toward flying duty anything but criminal negligence.

For example, it is stated in the seventh chapter of the manual, "Conducting Flights," that taxiing across or onto the runway without the controller's clearance is prohibited. It would seem that there's nothing complicated here. This requirement just has to be carried out efficiently. But A. Protsenko, commander of an Il-62 in the Far East Administration, disregarded it and taxied out on the runway without asking the controller. As a result, an aircraft that had already been cleared to land had to go around again in an urgent manner. It is not difficult to imagine what such irresponsible conduct by an aircraft commander could lead to.

Or take another case. The same chapter states: if an aircraft has deviated from the assigned direction during the takeoff run, the takeoff must be immediately aborted. It is necessary to do the same thing if an engine fails or a decision is not made rapidly. But V. Oleynik, the commander of a Tu-134A in the Belorussian Administration, acted otherwise. In taking off at night from the Dnepropetrovsk airport, he permitted the aircraft to deviate from the assigned direction during the takeoff run and to rotate below the predicted speed.

These unpleasant facts attest that the proper attention is not being devoted to the training and education of aircraft commanders in all flight subunits yet. Moreover, violations like this take place only where there is connivance and liberalism with respect to those who like to interpret the NPP requirements freely. Meanwhile, it is well known that each point in the basic law on flying duty was written not in the silence of offices; it was achieved by many years of practical experience and paid for by more than one bitter lesson. For this reason, no one is permitted to violate the Flight Operations Manual.

A great deal in organizing strict observance of flight laws and rules depends first of all on the managers of the average unit--the commanders of flight subunits and their deputies. Figuratively speaking, they have been called upon to become the driving oscillator in this important state work. It is very important that not one deviation from the NPP requirements remains unnoticed and that every flight is subjected to the most thorough analysis. The means of objective supervision are of great help in this. The data obtained with their help make it possible to promptly identify deviations in the crew's actions in flight and provide the opportunity to evaluate the level of its professional training and plan effective preventive measures. Experience shows that in subunits where they regard the means of objective supervision responsibly, methodically and competently, a sturdy barrier is erected against violations.

The means of objective supervision are especially needed in so-called "small-scale" aviation, where crews carry out missions detached from their main bases, as a rule. However, this important area of aviation accident prevention is neglected here the most. But a great deal does not depend on us in resolving this problem, unfortunately. We are expecting domestic science and industry to develop new standardized monitoring instruments designed especially for PANKh [use of aircraft in the national economy] operations.

An important integral part of our overall work to ensure the safety, regularity and efficiency of flights is high-quality and early preparation of cockpit personnel to carry out production tasks in the fall and winter season. It is well known that this is a most important and intensive stage of flight activity, which requires particular thoroughness and discipline in the obserbance of the NPP GA-85 and other basic flight documents. And the level of labor successes in the entire sector as a whole depends to a large extent on how each crewmember is prepared for it.

Speaking of strict observance of flight laws, I would like to dwell especially on an aspect of subunit commanders' activity such as individual training work with subordinates. Unfortunately, it is not being conducted everywhere conforming to plan and purposefully, and the character and level of preparation of crewmembers and the specifics of their production activity are not always taken into consideration. But it is very difficult to accomplish harmonious and coordinated work and ensure efficient implementation of the tasks assigned without this.

It also has to be kept in mind that the struggle for the strictest flying discipline is not a short-term campaign, but continuous and persistent work. And the more aviators involve themselves in it and the wider the publicity in evaluating one fault or another, the more tangible its success will be.

So the new Flight Operations Manual has been alive for more than 6 months already, and it is functioning and working. Cockpit personnel are conducting flights and resolving important national economic tasks in conformity with its requirements. And our very first duty is to unfailingly observe every regulation in it and to do everything necessary for successful completion of any flight mission. Only under this condition will we make a worthy contribution to realization of the plans of the 12th Five-Year Plan and to implementation of the historic decisions of the 27th CPSU Congress.

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CIVIL AVIATION

An-28 OPERATING PROBLEMS IN TAJIKISTAN CONTINUE

Moscow VOZDUSHNYY TRANSPORT in Russian 26 Aug 86 p 2

[Article by VOZDUSHNYY TRANSPORT correspondent A. Larenok under the rubric "Returning to What Has Been Published": "When It is Undertaken Together"; the article which evoked this followup appeared in JPRS-UTR-86-018, 29 August 1986, on pages 10-12]

[Text] Dushanbe--A report from Chief Engineer K. Lalayev, deputy chief of the Tajik Administration, published in our newspaper on 8 July, stated that a little over 2 months after An-28 aircraft had begun flying with local aviators, flights were discontinued because of various malfunctions. All the organizations--the OKB [Experimental Design Bureau] imeni O. Antonov, the developer of the engine, the supplier and others--abruptly lost interest in their creation after the airworthiness certificate was obtained. Repeated inquiries and calls from the Tajik Administration went unanswered.

Ensuring that the An-28 is in good working order (this aircraft should become the basic one on the republic's local air routes) and providing for its efficient use and flight safety depend on the mutual responsibility and effectiveness of the appropriate enterprises and organizations.

As a result of the newspaper statement, a conference was held soon afterward attended by D. Kiva, deputy chief designer of the OKB imeni O. Antonov; V. Kostogryz, chief engine designer; Yu. Sukhorosov, chief designer of the propeller and governor; P. Aleksashkin, chief of a GUZSANT [Air and Ground Production Equipment Orders Main Administration] department; G. Cherepko, leading engineer of the GlavNTU MGA [Scientific and Technical Main Administration of the Ministry of Civil Aviation]; (Cz. Kolis and W. Jaworski), representatives of the Polish People's Republic; managers of the Tajik Administration; and others.

Specialists from the design bureaus, together with engineering and technical personnel of the Tajik Administration, implemented a combination of measures; in particular, they entered certain changes in the flight manual and performed adjustment work.

Local, party and soviet organs devoted a great deal of attention to the work being conducted to put the new aircraft in service. O. Olamov, chief of the Transport and Communications Department of the Tajik Communist Party Central Committee; N. Litvinov, chief of the Transport, Roads and Communications Department of the TaSSR Council of Ministers; and other officials met with the specialists who had assembled in a work setting.

The conference participants later reported in Moscow on results of the work in the Tajik Administration to V. Chuyko, deputy minister of the aviation industry; V. Gorlov, deputy minister of civil aviation; and other officials. A special task force (headed by Deputy Chief Designer of the OKB imeni Antonov D. Kiva) has been set up there which will meet in Dushanbe in the first 10 days of each month to analyze the situation and evaluate the effectiveness of steps being taken to eliminate the downtimes and increase the reliability of An-28 aircraft.

Thus changes for the better are under way. However, a number of problems related to operation of the An-28 still await solution. In particular, this concerns the fact that the question of recovering the financial losses incurred by the administration because of An-28 downtimes still has not been resolved and the mutual responsibility of the sides has not been defined. In accordance with an agreement concluded with the OKB imeni O. Antonov, Tajik aviators also are waiting for flight tests to be conducted when the outside air temperature is up to plus 47 degrees and to determine if flights can be made to Murgab, the mountain airport with the highest elevation in our country (3,650 meters above sea level). It is already necessary now to take urgent steps to extend the engines' service life; otherwise, several aircraft will stop flying as soon as the end of September. We also want to have confidence that the most serious attention will be devoted to reducing the noise level in the cockpit, in the cabin, and in areas near the engines when they are operating.

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RIGA FACILITY STUDYING AIRCRAFT COMPONENT SERVICE LIFE

Moscow VOZDUSHNYY TRANSPORT in Russian 12 Jul 86 p 2

[Article by A Milov, senior staff scientist of the Riga branch of the GosNII GA [State Scientific Research Institute of Civil Aviation]: "Testing for Durability"]

[Text] The flight was unusual. The passenger seats in the cabin and pilots' seats in the cockpit were occupied by metal ingots. The crew's role was being performed by a special control unit developed on the basis of modern computer equipment.

Such "flights" are being conducted around the clock on an experimental basis by the Riga branch of the State Scientific Research Institute of Civil Aviation. The tasks being performed by the institute's scientists in test stand studies are connected to the principal problem—increasing an aircraft's service life without decreasing its reliability.

The concept is extremely clear. An airplane, helicopter or separate component is set up on a special stand. It also provides the opportunity to approximate real operational loading under laboratory conditions as closely as possible. At the same time, structures which have been in operation for an extensive period of time and which have "absorbed," we may say, all the real characteristics of it are subjected to testing. Perhaps this is the main distinction between our research and work being carried out by our colleagues in the Ministry of the Aviation Industry. We have the opportunity to "fly" without any risk beyond an aircraft's service life, identifying weak points in structures (from the viewpoint of durability).

Today the durability subunit of the institute is already in a position to conduct simultaneous tests of two mainline aircraft, three or four helicopters, and two dozen different assemblies.

A natural question is: to what extent do our capabilities meet the sector's requirements? If one is speaking about justifying the requirements that industry increase equipment service life beyond what was established before it is written off, our durability specialists are capable of coping with the tasks that have been set for a rather long period of time. This potentiality is tempting as well: to set up testing on full-scale test stands of

"representatives" of all the basic types of airplanes and helicopters which are close to their maximum service life. By conducting our "ground flights" with a significant advance, the aircraft will reveal all their secrets for us. Maintenance and inspection charts will become truly scientifically subsantiated, and operation will become safe. In our opinion, the meaning of scientific work in durability attending the operation of aviation equipment lies in this as well. Unfortunately, for the present this continues to be only our dream.

And one more aspect of our work--its economic efficiency.

Increasing the service life of an item beyond what was established before it is written off is essentially equivalent to the purchase of a new item nearly without cost. Even if it has a short service life, it will be nearly without cost. For understandable reasons, the word "nearly" is being used: expenditures are required for conducting research and testing, and the weak areas that are revealed must be strengthened and modified. In a word, specific capital investments are necessary. But after all, they are recovered with interest.

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FURTHER LASER RESEARCH IN AIRCRAFT PRODUCTION, REPAIR URGED

Moscow VOZDUSHNYY TRANSPORT in Russian 12 Jul 86 p 3

[Article by VOZDUSHNYY TRANSPORT Irkutsk correspondent Yu. Kolesnikov: "Returning to the Answer: 'And a Laser is Looking for the Way'"]

[Text] In correspondence under this heading (VOZDUSHNYY TRANSPORT No 112 of 17 September 1985), the low rate of development of test models of the LOK-3M" laser was discussed. Civil Aviation Plant No 403 and the branch of the Kiev Insitute of Civil Aviation in Irkutsk came forward as the initiators of this promising work. A group of enthusiasts--scientists and experienced workers--have been engaged for a long time here in the introduction and production of laser technology. Basic directions in the work are increasing the durability of metal components, protecting them from their ancient enemy--corrosion, and restoring worn-out components by the laser surfacing method. A broad range of activity is being opened up in this field, and it is so great that the economic gain is difficult to assess. Unfortunately, far from everyone understands this yet.

We must go back several years here. As early as 1979, scientists at the Irkutsk branch of the KIIGA [Kiev Institute of Civil Aviation Engineers] began their first attempts in studying laser technology. At that same time, an economic agreement was concluded with the GosNII [State Scientific Research Institute] of Civil Aviation on the problems of removing coats of paint and varnish from aircraft parts and assemblies with the aid of laser emission. The subject was concluded and turned over to the customer in 1983. The new method proved to be promising in all respects, especially as specifications and technical requirements had been developed for its introduction and a sketch had been made of the device for surfacing the fuselage of an An-2 aircraft. An exhibit was shown at the USSR VDNKh [Exhibition of Achievements of the National Economy] and at the "Higher Education in the USSR" international exhibition. Specialists could not pass by the innovation. And more: the gain expected from introducing the system mentioned promised to be 458,000 rubles annually. Little was left for the work, it seemed--it must be introduced. But not right here. Under a decision by a commission of the Scientific and Technical Main Administration of the Ministry of Civil Aviation, further financing of the work was discontinued.

But persons seeing beyond the concerns of the moment did not drop their hands. In due course, close contact was organized between the branch and Civil Aviation Plant No 403. They had been looking closely at a laser beam for a long time here as well. After all, repeated use of parts provides a significant saving. Here is just one example. Restoration of the beveled edge of a mushroom valve on an An-2 aircraft by the laser surfacing method results in an economic gain of 50,000 rubles. This is just one component at one plant. If the technology for their repair is introduced, the funds spent to purchase new parts can be retained the same way that the metal used for their manufacture can be preserved.

The Novosibirsk Institute of Precision and Applied Mechanics of the Siberian Department of the USSR Academy of Sciences prepared technical documentation for the first models of the "LOK-3M" laser to order for Civil Aviation Plant No 403 and undertook to provide assistance in the process of manufacturing the equipment and working out the technology.

Well, when will the laser take its place in production? It is difficult to answer that question definitely at present. After the spark of enthusiasm, coolness toward this matter is being observed today on the part of certain organizations. In the article "And a Laser Is Looking for the Way," quite a few critical remarks were made about the "Aviaremont" [Aviation Equipment Repair Industrial Association]. Giving credit for the promising technology and consumed by the new concept, they at first even issued an order for the association providing for the manufacture of lasers. But they soon cooled toward the innovation. Despite the fact that the subject cited had been included in the plan for introduction of new technology, they replaced the design section of the work with a game of "ping-pong." The subject itself turned out to be the ball, and the letters containing reciprocal reproaches served as the paddles. There is no need to quote these messages, especially as the true reasons for the red tape are far from being in every one of them. Let us take for an example the complaint by officials of Plant No 31 about the failure to supply "a full set of design documentation." This documentation had been sent--and not in a single copy, but when a number of managers were replaced...they lost it. This is an illustration of the level of business relations between two plants.

The official response from the All-Union association, which reached the editorial staff more than 6 months from the day the correspondence was published, does not inspire confidence, either:

"Shortcomings have to be acknowledged in the planning and organization of work to develop and introduce new technological processes in the VGPO [All-Union State Industrial Association] "Aviaremont." With the objective of putting work in order to introduce the achievements of scientific and technical progress in aviation repair production, a new department of scientific and technical progress and production development was established in the association in 1986. Questions of introducing laser technology in aviation repair production have been put under special supervision."

But, it turns out, there are number of other problems which have fallen completely out of the plant operators' field of vision. Ye. Bolshakov, chief of one of the departments of "Aviaremont," helped to clarify their essentials.

"The point is that this subject was not mentioned in the plants' plans. After all, we have a planned economy. In order to manufacture lasers, it is necessary to requisition the necessary components ahead of time and link up with dozens of suppliers. We have been attempting to make a laser by 'guerrilla' means. For this reason, our proposals were greeted by experimental plants rather coolly."

"Just what means is the most realistic in your view?"

"Legal means. At Plant No 403, they didn't consider it necessary to put the work on an official footing. It is absolutely clear today that nothing will be achieved otherwise. Let us assume that we will make the lasers, and then what? How are they to be put into production? This is a very important question. It was necessary to act in concert with the State Scientific Research Institute of Civil Aviation and the GUERAT [Operation and Repair of Aviationm Technical Equipment Main Administration] from the very beginning. Independent action in matters of introducing new technology, where aviation and matters of flight safety are concerned, is simply an intolerable luxury."

It is now obvious that if Plant No 403 and "Aviaremont" come closer to the manufacture of laser test models in a poor and meager fashion, they will be as far from putting the very technology into production as they were at the start of the route. The question comes to mind: is it possible that an association where experienced specialists are working did not see such serious omissions by the plant enthusiasts? But if they had been prompted and given advice in time, the work would certainly have taken a different turn.

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FUEL EFFICIENCY OF FUTURE Il-96-300, Tu-204 AIRCRAFT TOUTED

Moscow VOZDUSHNYY TRANSPORT in Russian 9 Aug 86 p 3

[Article by TASS correspondent I. Ivanov under the rubric: "The Details": "Birth of a Giant"]

[Text] Moscow Oblast--A record for economy may be set even among such "atlases" of aviation as the modern airbuses. The design of a new Soviet long-range mainline aircraft, the Il-96-300, proves this. Its engines will consume just 23 grams of fuel to fly one passenger for 1 kilometer. This indicator is half that of its brothers-in-arms now being operated in the world.

Splitting the swift airstream with its wings, a steel model of it appears that it is just about to take off in the wind tunnel of the Central Aerodynamics Institute (TsAGI). It is difficult to visualize now from this small model what a giant the new airbus will be: it will be 50 meters long, and the fuselage will be 6 meters in diameter, 1.5 times larger than the metro tunnel. The Il-96-300 will begin its first flights on main routes in the USSR by the end of the current five-year plan. It will need a little more than 10 hours to fly 300 passengers right away for a distance of 9,000 kilometers.

It owes its economy and carrying capacity not only to the four unitized prop-fan engines, each of which develops thrust of up to 16 tons. Looking at the model, you note the shape of the wing, which is not at all ordinary. Its special contour is somewhat thicker than the traditional wing, with less sweepback.

"This is one of the latest results of basic research at the TsAGI in the field of 'supercritical profiles,'" explained Academician G. Svintsev, director of the institute. "The new wings of the Il-96-300 increase the aerodynamic performance of the aircraft substantially. At the same time, they are capable of sustaining high aerodynamic properties up to speeds close to the speed of sound. These wings not only lift the aircraft into the air, but ensure economy of flight as well."

The Tu-204 passenger aircraft for medium-range mainline routes, which, like the airbus, will replenish the fleet of Soviet airliners by the beginning of the 1990's, will also have such wings. The excellent aerodynamics and improved engines will enable it to consume relatively little fuel--just 18-19 grams per passenger-kilometer.

Further progress in civil aviation lies primarily in further improvement in the aerodynamics, engines, equipment and materials of subsonic aircraft, G. Svintsev believes. Even more economical aircraft will be developed in the coming decades, and substantial changes will affect not only the wing shapes. The institute's scientists today are studying the concept of an experimental aircraft with wing planes which will function under artificial laminar flow conditions, that is, where part of the air in the wing boundary layer is drawn off in flight, substantially reducing drag. Hence the economy of the aircraft will be increased. The efficiency of this method has been confirmed by many tests in wind tunnels and in flight.

The results of research will form the basis for the design of new powerful and economical airliners in the near future.

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BRIEFS

NEW KZYL-ORDA AIRPORT--Kzyl-Orda--The time required to fly from the oblast center to the Caucasus' Mineral Waters is several times less with the start of direct regular flights by the Tu-134 airliner. Oblast residents have acquired the opportunity to fly to Moscow without changing planes and four times faster than before with the opening of the new Tsentralnyy Airport. All oblasts in Kazakhstan henceforth will have direct air service to the capital. Kzyl-Orda has been linked with over 20 cities in the country and the range of local routes has been expanded as well. [By K. Imanberdiyev] [Text] [Moscow SELSKAYA ZHIZN in Russian 30 Jul 86 p 4] 8936

DOSTLUK AIRPORT OPEN IN TuSSR--Dostuk--An airport was opened in the rayon center of Dostluk on the eve of Air Force Day. This is the 11th airport for local air routes registered to our aviation enterprise, which is headed by Honored Pilot of the USSR S. Lazarev. Local residents warmly welcomed the aviators who made the first proving flight to the new airport. "Our rayon," says K. Khatamov, first secretary of the party raykom, "was formed 3 years ago. Here on the right bank of the Amudarya River, livestock breeding and cotton-raising are being more and more extensively developed. Unfortunately, communication with the oblast center and other rayons in the oblast situated on the left bank of the Amudarya has been difficult. The opening of regular air passenger service between Chardzhou and our rayon center will resolve the transportation problem to a significant extent. In behalf of all local residents, I say many thanks to the aviators!" [By stringer S. Statsenko] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 16 Aug 86 p 1] 8936

NEW AYNI AIRPORT, An-28 SERVICE--Ayni, Tajik SSR--Ayni, situated between the Turkestan and Zeravshan Ranges, is one of the rayon centers in Tajikistan that are difficult to reach. It has been linked by air service with Leninabad and Pendzhikent. The Yak-40 turbojet began flying from Dushanbe to Pendzhikent not long ago. Extending the route to Ayni proved to be impossible: this aircraft is not "registered" for mountain passes. But the An-28 turboprop?... A commission headed by Yu. Gerasimov, first deputy chief of the Tajik Administration, visited Ayni. Specialists under the supervision of Honored Pilot of the USSR V. Staroverov, deputy chief of the administration for flying activity, came to the conclusion that the An-28 can be flown here. A route to ensure flight safety was selected, a topographical survey was conducted of the locality where a runway with synthetic paving and an air terminal complex with a capacity of 20 passengers per hour could be built. All the source data are

being sent to the planning group of the Tajik Administration, headed by Z. Shagiyev. The specialists have undertaken the work enthusiastically. They expect to begin construction of the new airport in Ayni next year. [By Yu. Bobkov] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 19 Aug 86 p 1] 8936

MAKHACHKALA AIRPORT RUNWAY IMPROVED--Makhachkala--The runway at the airport in Makhachkala, the capital of Dagestan, has been renovated. And this momentous event for aviators took place nearly a year and a half ahead of schedule. Dagestan's airport, built during the first five-year plans, today has been transformed into a large transportation hub linking Makhachkala with more than 20 cities in the country. And now, the landing of a Tu-154 and direct service to Moscow are possible. The completed runway renovation is the start of a great deal of work for fundamental technical re-equipment of the enterprise, to introduce new automated landing systems, and to upgrade the quality of flights and passenger services. Dagestan aviators have to increase passenger turnover by 37 percent as much in the current five-year plan. The new jet technology which the airport has begun to receive will assist in this. The efficiency and coordination of work by aviators and construction workers helped to surmount renovation difficulties while the airport was in operation. Collectives of the "Sevkavdorstroy" trust, subocntracting organizations, and the administration's OKS [capital construction department] deserve kind words. As recently as a half century ago, mountain residents spent no less than a month to get to Moscow; now they can leave for the capital in the morning and return home in the evening. [By V. Viktorov, deputy commander of the aviation enterprise] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 26 Aug 86 p 2] 8936

CSO: 1829/311

DEPUTY MINISTER ON RSFSR HIGHWAY NETWORK DEVELOPMENT

Moscow ZA RULEM in Russian No 6, Jun 86 pp 1-2

[Interview with Artur Akimovich Nadezhko, RSFSR deputy minister of highways, by ZA RULEM correspondent V. Panyarskiy; date and place not given]

> [Text] It is impossible to imagine a single sector of the economy functioning or the needs of the population being met without highways today. They are also of great importance for solving social problems of the society. There are more than 1 million kilometers of general-usage roads in the country today, about 750,000 kilometers of which are paved roads. A large portion of them pass through the territory of the Russian Federation. Our correspondent V. Panyarskiy talks with RSFSR deputy minister of highways Artur Akimovich Nadezhko about the state of affairs and prospects of highway development.

[Question] Artur Akimovich, we are meeting at a significant time; the 27th CPSU Congress concluded just recently and approved the "Basic Directions of Economic and Social Development of the USSR for 1986-1990 and the Period until the Year 2000." This document determined that the highest goal of the party's economic strategy was and remains an increase in the welfare and a steady rise in the material and cultural level of life of the people. Considerable acceleration of social and economic development of the society in the forthcoming period requires an all-round intensification and increase in production efficiency based on scientific and technical progress. Fulfillment of these extensive tasks also directly concerns motor transport. In turn, the motor vehicle loses its indisputable virtues to a considerable extent without good roads. Therefore, in order to have accurate reference points in our conversation, let us begin with what the republic's road management is today.

[Answer] I do not think it is necessary to prove to the readers that the highways are a key link in the infrastructure of the national economy; however, we should cite some statistical details. Motor vehicles today account for more than 80 percent of the annual volume of freight shipments and more than 90 percent of passenger traffic. I would make special note of the importance of highways in rural areas. Suffice it to remember that in our huge country there are still more than 300,000 populated areas far removed

from railroad stations and ports. For their millions of residents, highways are the sole overland lines of communication.

At all stages of development of the state, the party and government have given attention to developing motor transport and building a broad network of roads. Decisions were adopted in the late 1950's, on the basis of which the resources of kolkhozes, sovkhozes, transport and other enterprises and economic organizations were pooled together to participate in building and repairing these roads. Thanks to these additional financial and material sources, it was possible to increase sharply the rate of construction and reconstruction of roads in a comparatively short period of time. In the Russian Federation alone, expenditures for construction, repair, and maintenance of highways during the last 15 years increased nearly fourfold.

In the last five-year plan more than 50,000 km of paved roads were put in service in the republic. They accessed thousands of populated areas to main routes. During this same time, more than 3,400 km of high-grade roads of state and republic importance were put into operation. They were built on approaches to major cities where the traffic intensity is especially great. New routes linked major centers of the republic, reconstructed sections of highways were on many high-traffic routes were put into operation, and bridge crossings over the Neva, Don, Oka, Vyatka, Amur, Yenisey, and Tobol began operation.

All these roads have enriched our economy just recently. But in general, the basis of Russia's motor vehicle communication lines is a base network including nearly 50,000 km of paved and mostly high-grade roads which interconnect cities with population of at least 100,000 people.

The entire road network of the RSFSR runs about 500,000 km. Of course, it is not uniform in quality. Approximately four-fifths are paved roads, of which about 200,000 km have improved surfaces (cement-concrete, asphalt-concrete, blacktop). The rest are still dirt roads. Some regional centers, mainly in the northern and eastern regions, are not linked with paved roads. There are many local dirt roads which link remote populated areas and a number of central farmsteads of kolkhozes and sovkhozes with the base network.

[Question] Artur Akimovich, in the country as a whole, steps are being taken by your ministry to develop and improve the highway network. At the same time, assessing its current state from critical positions, one must state that in its level of development it is noticeably lagging behind the demands of the country's actively developing economy. Up to the present time, about 100,000 populated areas of the country do not have well-organized outlets to motor vehicle routes, and most of these areas are located within the RSFSR. In this connection, how do you assess the republic's highway situation as a whole?

[Answer] If you call a spade a spade, where there are no paved roads, there are no roads. Today the national economy is faced with the difficult task of achieving an increase in economic indicators based to a considerable extent on saving resources; eliminating poor roads is one of the real ways of doing .pa this. We have already said that more than 80 percent of all freight is shipped by motor transport. But at what price?

Due to the insufficient development of roads, one of the motor vehicle's primary advantages is not being fully utilized--delivering freight at a high speed from origin to destination, from door to door as they say. Shipping costs increase for this same reason. They are four- to fivefold higher on dirt roads than on improved paved roads, and the productivity of the rolling stock is accordingly lower. We know that trucks break down permanently and are written off with 50-60,000 fewer kilometers in the republic's rayons with poor roads.

Agriculture is especially seriously hurt due to the insufficient rates of development of highways. The productivity of motor vehicles when hauling agricultural freight over dirt roads, even in the dry summer period, is 1.7-2.0-fold lower than on paved roads. In this connection, in rayons where the network of these roads is poorly developed transportation costs reach 40 percent of the production costs. Serviceable motor vehicles stand idle for 40-60 days each year during the period between seasons, and up to 60 percent of the tractor fleet at that same time is used for unproductive work towing vehicles or hauling freight that is unprofitable for it.

As you can see, all this information forces one to think seriously about how much more must be done for road management to meet the ever-increasing needs of today's economy.

[Question] The "Basic Directions of Economic and Social Development of the USSR for 1986-1990 and the Period until the Year 2000" also set specific tasks for the highway workers. Please tell us what kind of new roads will the republic get in the 12th Five-Year Plan.

[Answer] Our main concern for today is the more than 100,000 km of short dirt thoroughfares included in the RSFSR highway network. In the forthcoming five-year plan we must build 54,000 km of paved roads, of which at least 38,000 km are improved surfaces. Thus, by 1990 we should basically have completed linking the regional centers with the central farmsteads of kolkhozes and sovkhozes, that is, the primary task set forth in the basic directions should be resolved.

In recent years the problem of overloading main highways near major cities has been very clear. The problem is that about 20 percent of the out-of-town transport work is done on the approaches to them, but the total length of these approaches is only 1.2 percent of the entire paved highway network. An analysis of their technical state shows that these are mainly category III and IV roads, although their parameters should be considerably higher according to the level of their current load.

Traffic intensity here frequently exceeds what it was designed for by several-fold. Consequently, there is an urgent need to build new main highways of higher technical categories or reconstruct hundreds of kilometers of old roads. This work will continue in the current five-year plan on approaches to practically all major cities of the republic.

[Question] It is no longer a rarity for drivers to encounter multilane, excellently equipped and organized roads on approaches to big cities. Man quickly gets accustomed to good things, and the questions arises more and more often: When will these main highways become commonplace on long stretches, if only between major centers in the republic? The Baltic area is usually cited as an example in such cases.

[Answer] The example of the Baltic republics, especially Lithuania, impresses everyone who sits behind the wheel. This is understandable. But what also must be understood is that this cannot become an immediate landmark for Russia. This must be stated with all certainty. The thing is that in the Baltic republics the roads are counted by tens and hundreds of kilometers, but we count them by the hundreds and thousands of kilometers. Building high-category main roads is a very expensive matter requiring enormous material and labor expenditures. Thus, one kilometer of road between Moscow and Serpukhov cost in excess of 2 million rubles. These funds would be enough to build 15-20 kilometers of the regular road which links rayon centers or central farmsteads of kolkhozes and sovkhozes.

In addition, near Moscow, where the traffic capacity of the approach routes is already practically to the limit, construction of high-grade main roads is completely justified; but away from major cities the picture is quite different. Traffic intensity on the main freight-traffic routes of the republic's highway network has not yet reached one-half of the rated capacity. I think each driver who has had the opportunity to drive around the country would agree with me: As soon as you leave the area of a major center, you end up on an open road. We must have a reasonable approach in everything and cannot allow ourselves the luxury of having non-working multilane main highways next to rayons that do not have regular surfaced roads.

As for providing services on highways, the complaints here are completely valid. There are clearly not enough hotels, cafes, dining facilities, camping grounds, stops, gas stations, repair enterprises, and communications facilities. The complexity of the problem is made worse by the fact that its resolution depends on many ministries and departments whose efforts have not been properly coordinated so far.

A decision has now been made on creating a standard for providing motor services. This will be the highway between Moscow and Leningrad. Our task in the next few years is to make it such. As for the other routes, work in the current five-year plan on public welfare will be carried out in complete accordance with the tasks set forth in the "Comprehensive Program of Development of Consumer Goods and the Sphere of Services for 1986-2000."

[Question] We have already said that goods roads are the solution to many economic problems and that lines of communication, primarily highways, are often also linked to complex social phenomena, especially in rural areas. We know that at kolkhozes and sovkhozes having good roads the turnover in personnel is 1.5-fold less and the number of school graduates who remain to work on the farms is twice as great compared to areas with poor roads, where young people return less than half as often after serving in the Army.

The Institute of Comprehensive Transport Problems of the USSR Gosplan conducted a study which showed that the social effect of road construction considerably surpasses the direct gain from lowering transportation costs we have mentioned in some detail. Thus, the successful development of the entire society depends on what kind of roads we will have, which means that building a highway network should become a nationwide task....

[Answer] This is unquestionably true. But first I want the readers to know: We understand perfectly well what great, responsible tasks are facing the sector and are prepared to resolve them on all directions. In order to increase the quality and lower the time for planning work, we are introducing advanced geophysical methods of surveying and automated methods of planning.

Specific measures have been planned for accelerating scientific and technical progress in the sector. We are intensively introducing advanced resource-saving technologies in building and repairing roads, which will ensure us high economy, quality, and reliability of roads. I have in mind, for example, new types of surfaces for category III and IV roads, so-called moist organic and mineral mixtures. Being equal in operational qualities to asphalt, they are much more economical. When producing them it is not necessary to heat the component materials to hundreds of degrees and waste energy on reprocessing asphalt into bitumen. Asphalt-concrete plants will not be smoking. More than 3,000 kilowatt-hours of electrical energy and in excess of 8 tons of conventional fuel is saved in building each kilometer of road. We have started using various methods of regenerating old asphalt in repairing asphalt surfaces, giving it a second life. By doing this, an average of up to 35 tons of bitumen and more than 100 cubic meters of high-strength crushed rock will be saved in repairing each kilometer of road.

In the current five-year plan scientific subdivisions of the ministry are concluding the development of detailed catalogs of local materials and secondary industrial resources for each oblast, kray, and ASSR. This makes it possible to involve a good many secondary resources in road construction--fly ash from heat and electric power stations, various metallurgical slags, industrial rubber waste--and also local materials strengthened with some kind of binder. It has been calculated that in the 11th Five-Year Plan in the RSFSR one out every two kilometers of improved-surface roads was built using such local materials and secondary resources. This made it possible to save tens of millions of rubles and free about 15,000 rail cars from hauling 27 million cubic meters of high-strength crushed rock.

The amount of work for marking roads, erecting various barriers on dangerous sections, and installing new traffic control systems will be increased to improve traffic safety. Extensive introduction of new paving asphalt with increased roughness will begin in the next few years. Such a surface finish lasts for many years, since stone materials with various resistances to wear are introduced into the asphalt. As the less wear-resistant components begin to wear out, the stronger components come into play, and the asphalt paving ensures good wheel traction during the entire service life of the road. More

than 1,000 km of roads with such surfaces will be built during the current five-year plan. There are also plans to introduce other new materials and technologies.

The road management system is also being improved. We are actively involved in introducing an advanced form of brigade organization of labor which provides incentives to workers for achieving high quality of construction, repair, and maintenance of roads. Today there are already nearly 3,000 of these brigades in the sector, in which more than 30,000 people are working. Labor productivity and the quality of work in these collectives are much higher than the average for the sector. In the last five-year plan we confidently handled the plan quotas, and I think we will maintain the accelerated pace in this one as well.

Undoubtedly more can be done. However, not everything here depends on us. There are grounds to make serious claims on highway science. Its forces are now split up over a number of various departments, which leads to smallness and duplication of work. As a result, it is turns out to be unable to handle quickly and on a high level long-range problems, the resolution of which alone can result in a qualitative change in the sector's scientific and technical potential.

Domestic machine building still continues to produce low-efficiency road building equipment, and of course it does not suit us. Modern, highly productive equipment in construction organizations of the RSFSR Ministry of Highways is not more than 5 percent of the total amount. All this results in our workers being forced to perform many operations manually, especially in the repair and maintenance of roads; the overall level of mechanization here is only 53 percent. We have the same problems with construction materials.

There is an urgent need to make a fundamental change in the attitude of the USSR Gosplan and industrial, construction, and other ministries to such an important issue as highway development. Only with their concerned attitude toward the problems of the country's road management can we confidently say that the roads which await us will begin to meet our demands fully.

12567
CSO: 1829/292

VOLGA MOTOR VEHICLE WORKS PRODUCTION PLANS

Moscow ZA RULEM in Russian No 6, 1986 p 10

[Article under the rubric "News, Events, Facts": "On the VAZ Assembly Lines"]

[Text] In 1985 the Volga Motor Vehicle Plant (VAZ) manufactured 724,425 motor vehicles, including 21,000 of the new VAZ-2108 models which in our country have been given the name "Lada-Sputnik." The debut of these motor vehicles on the international arena took place in January; they were exhibited at the automotive exhibit in Brussels. In March, the VAZ-2108, which is being exported under the trade name of "Lada-Samara," was displayed at the Geneva Automotive Show. The first 400 vehicles, commercial models, have already been shipped to Belgium, Holland, and the FRG.

In the first year of the 12th Five-Year Plan, the VAZ collective pledged to quadruple the output of the new front wheel drive vehicles and manufacture 85,000 "sputniks" in 1985. The VAZ-2104 model has been put into production in place of the universal VAZ-2102, production of which has ceased. This year 50,000 of these motor vehicles will leave the gates of the plant.

Production of models VAZ-21013, VAZ-2105, VAZ-2106, VAZ-2107, and VAZ-2121 continues in 1986. There were more of the VAZ-2106 model produced in the first quarter (30 percent of the total). As for the VAZ-2121 "Niva" motor vehicles, they account for about 10 percent of the daily output of vehicles. Now they will also be delivered to the export markets disassembled and assembled on site by assembly enterprises.

As it follows from the collective's socialist commitments, by the end of the year the plant should basically complete production preparation for a 5-door version of the new VAZ-2109 front wheel drive series and begin manufacturing an experimental-industrial batch.

12567
CSO: 1829/292

GENERAL DIRECTOR ON IZhMASH ASSOCIATION PRODUCTION PLANS

Moscow ZA RULEM in Russian No 7, Jul 86 pp 1-2

[Interview with General Director of the IZhMASH [Izhevsk Machine Building] Association Vasiliy Semenovich Tarasov by B. Demchenko, ZA RULEM correspondent; date and place not specified; under "On the Course of the 27th CPSU Congress" rubric: "What Will Make 'IZhMASH' Happy"]

[Text] The acceleration of scientific and technical progress is the main trend in further improving the efficiency of our economic system. This statement, which was formulated in "Basic Trends of Economic and Social Development in the USSR For 1986-1990 and the Period Until the Year 2000," determines the development of all sectors of the country's national economy. The assimilation of new technology, the high quality of products being manufactured, the satisfaction of consumers' demands, and coordinated interaction with subcontractors--the party congress placed goals like these before each enterprise. Our correspondent met with General Director of the IZHMASH Association V. S. Tarasov in order to discuss with him these urgent questions about motor vehicles and motorcycles being manufactured by the association's plants.

[Question] Vasiliy Semenovich, before talking about the prospects for "IZhMASH" in terms of motor vehicle production I would like to begin with the results of the 11th Five-Year Plan. So far as we can judge by the readers' mail, the problems of quality and the preparation of production of a new basic model were not completely solved!

[Answer] If one critically approaches an assessment of our work during the past five-year plan, then it is necessary to recognize that "IZhMASH" activity indicators in connection with motor vehicle and motorcycle production are not as good as we would like. Although the state of affairs has improved.

Due to an increase in labor productivity alone we increased production volume by 16.4 percent and expanded the output of motor vehicles, motorcycles and other consumer goods by 90 million rubles. In addition, in 1985 we manufactured one and a half times more motor vehicle spare parts than in 1980. These facts must

make us, the association employees, happy, but the consumer perceives them as something that stands to reason. And, in general, he is right, since he is waiting for more from us.

Yes, we have done current updating of the IZh-2125 model. Its brake system now meets all of today's safety requirements. We are planning to gradually introduce into the design a number of assemblies of the prospective model. The association conducted all kinds of testing of the new basic IZh-2126 model (ZA RULEM, 1985, No 5, the editor), and it has been recommended for production.

At the same time, we still have quite a number of annoying "but's." We still have not provided for stable quality of the present model, and this worries us greatly. Motor vehicles being manufactured by us have a low corrosion resistance of the body--the bitumen mastic being received by the association absolutely do not meet the requirements of the time. We have serious complaints about the Ufa Motor Plant. It is not showing activity in operations for improving the economical operation of the UZAM-412 engine, and naturally the consumers are addressing their complaints to us, the suppliers of the completed motor vehicle. Finally, the prospective model was not put on the assembly line for a number of reasons.

[Question] And what is the situation in the area of producing motorcycles?

[Answer] During the years of the 11th Five-Year Plan, we made 319,200 more of them than during the 10th Five-Year Plan. We assimilated six models and modifications. But at the same time we began to become aware of certain difficulties with sales. Therefore, meeting the desires of motorcyclists--especially the rural ones, we are increasing production of the one-cylinder models, which are popular, and we intend to bring it up to almost a third of the total output. Simultaneously, the manufacture of spare parts for motorcycles has more than doubled.

[Question] Vasiliy Semenovich, don't you think that a reduction in the quality of IZh motorcycles became one of the reasons for a decrease in demand by the end of the 11th Five-Year Plan? Judging by readers' letters, complaints about the "IZh-Yupiter" motorcycles pertained primarily to the design and to the quality of their assembly in terms of all models as a whole. The 27th CPSU Congress formulated a completely different approach to the quality of manufactured items. What is "IZhMASH" doing in this regard?

[Answer] The internal problems of an enterprise and the complexities of production do not worry any consumer. It is important to him that the thing purchased, whether a motorcycle or a cheap ball-point pen, is in good working condition. In other words, the buyer evaluates only the final result of labor. And, without question, he is right. But for us the nature of a defect is far from indifferent, if such a thing is detected.

Objective analysis shows that 90 percent of all complaints--I emphasize, justified and valid complaints--are on the conscience of our subcontractors who deliver defective parts. In order to close the door in front of them we stiffened primary incoming control of fully complete components and units, increased

fines, and are appealing to the public organizations of our subcontractors in the most serious infractions. Let's say, in 1985 alone twice the 1984 sum was recovered from specific culprits.

Within the association we are striving to get away from distributed responsibility to personal responsibility. That is why now we are examining all complaints and grievances in the presence of specific executives right in those sections where these items are manufactured. Recently nearly 40 enterprise standards were revised in order to make requirements for quality more rigid and specific. Certification of all work places and calibration of power nut-drivers was done and a 100 percent inspection of electrical equipment in terms of assemblies and following assembly was incorporated. In August 1985 a meeting of the council of directors on motor vehicle and motorcycle quality was held at which additional measures were worked out. In February 1986 these matters were discussed by the party and economic active membership. We think that these measures will bring the desired results.

[Question] Some of the journal's readers are perturbed about the discontinuation in manufacturing the "IZh-Planeta-Sport:" a motorcycle like this had and has its followers. Will another model be coming out to replace it?

[Answer] There is a demand for a motorcycle of a type like this among a certain category of motorcyclists--we understand this--and it is necessary to satisfy it. The "IZh-Planeta-Sport" was idle on the assembly line from 1974 to 1984--this is a lot, and the time has come to replace it.

The development of a new model under the designation "IZh-Orion," a high-speed and economically operating one with a 4-stroke, 1-cylinder engine of the 500 cubic centimeter class, is approaching an end right now. It is totally original in everything--from the outward appearance to individual parts. For the first time in domestic practice a motorcycle will receive disk brakes with hydraulic drive. We calculate that the first lot of motorcycles like these will make their appearance on roads in 1988.

[Question] I assume that our motorcyclists will receive the new model with great interest. Frankly speaking, they are not spoiled and they are waiting for bold steps from industry. Today the words "technical progress" are on everybody's lips, and, when a leading supplier of motorcycles prepares a basically new model, this of course is an event. Incidentally, little by little they already know about it and there is even a rumor about the cooperation of "IZhMASH" with the YaVA (CSSR) and "Yamaha" (Japan) plants.

[Answer] Yes, the four-stroke engine for the motorcycle that I just named is the result of our cooperation with "Yamaha." Well, then, the disk brakes and hydropneumatic front fork were developed with the participation of the YaVA plant. As regards the over-all configuration, the motorcycle's concepts as a whole and its outward appearance are a matter of the "IZhMASH" specialists.

Our new motorcycle is designed for operation as a one-passenger vehicle, but the design of the frame and running gear and the power reserve are sufficient for travel with a sidecar.

[Question] According to everything it is evident that the new IZh is a high-speed motorcycle designed mainly for main highways, but in fact...

[Answer] I understand what the question concerns. You mean the problem of speed. Yes, at the plant we are convinced that the unfounded speed limit of 70 kilometers per hour being introduced right now for motorcycle traffic on country roads is technically unsubstantiated and unjustifiable. From all points of view a monolithic traffic flow, all the components of which have the same speeds, creates the greatest safety conditions. We artificially deprive a motorcycle driver of the main thing--maneuverability and dynamics, and as a matter of fact we drove him under the truck wheels. Indeed, from the technical point of view a situation like this is unnatural, since it does not allow the use of a five-step transmission which makes it possible to go to operating conditions with the least exhaust gas toxicity and fuel consumption. So it isn't always just designers who control technical progress.

The main argument of speed limit advocates is safety. But today our motorcycles already meet all international safety requirements and tomorrow's models will move a stage higher. And we are convinced that a motorcycle must travel along roads with the same speed as that of passenger cars. We are hoping road traffic organizers will correct this error and heed the voice of motorcyclists and motorcycle builders.

[Question] In light of the discussion begun by the journal on what motorcycle there is to be for the countryside, I would like to know what the plant plans to do in this direction during the years of the five-year plan.

[Answer] We think that a motorcycle like this must be created on the basis of the existing basic model--this would simplify solving the problem with spare parts. At the same time in comparison with it, it is necessary to adapt the rural model for travel on dirt roads. First of all, the demand for an engine with flexible performance, which has good propulsion at low revolutions, stands behind this requirement. An example of that is the "IZh-Yupiter-5" engine already being manufactured by us (ZA RULEM, 1985, No 1, the editor). Further, the specific selection of gear ratios in the transmission is necessary in order to better adapt the motor in terms of propulsion possibilities to various road conditions. And not only this, but also an increase in the number of gears. By the end of the five-year plan we are planning to equip our motorcycles with five-step transmissions with fifth-step overdrive and increased gear ratios in the first and second steps. And, finally, there are cross-country type tires with developed lugs. Incidentally, there are tires like these (the K-124 models) that were created at the Kirov Tire Plant (KShZ). Testing of them on the "IZh-Yupiter-5T" motorcycle provided good results. And, the most important thing, the KShZ can assimilate them in the shortest time frame. However, for the time being these tires are not included in the plan for the plant.

And there is one more quality that is absolutely mandatory for a rural motorcyclist--reliability. In this regard, electrical equipment is the weakest link. Right now we are working out a simpler and more reliable version of it.

[Question] It is gratifying that the long term is evident in motorcycle building and that technical improvement of motorcycles being produced is in progress. And what is the situation with motor vehicles? The subsequent fate of the successful--in their opinion in terms of correspondence familiarity--IZh-2126 model worries the readers (ZA RULEM, 1985, No 5).

[Answer] A decision has been made already on putting this motorcycle into production in the 12th Five-Year Plan. Preparation for manufacturing it means substantial expenditures on re-equipping production. But subcontractor enterprises are faced with reorganizing simultaneously with our association: the Ufa Motor Plant which is obliged to make a modernized, more economically operating engine and the Omsk Transmission Plant which is responsible for the five-stage transmission. The Perm Association imeni October Revolution must assimilate the new, torsion front suspension and rack steering, the Ustinovka Mechanical Plant the rear axle, and the Vladimir "TOChMASH" [Precision Machine Building] Association the instrument and assembly cluster of electrical equipment. Modernization of these and a number of other enterprises is stipulated by the same decision. We are hoping for delivery of new materials and fully complete items by the enterprises of Minavtoprom [Ministry of the Automotive Industry], Minkhimprom [Ministry of the Chemical Industry], Minneftekhimprom [Ministry of the Petroleum Refining and Petrochemical Industry] and Minlegprom [Ministry of Light Industry], but for the time being the matter has not gone farther than hopes.

However, using the occasion, I would like to note that the requirements of the 27th CPSU Congress on accelerating technical progress are directly connected with overcoming bureaucratic barriers and order of seniority. And we calculate that these ministries with the help of appropriate services of USSR Gosplan and Gossnab will begin to render assistance to us that is no less active than they rendered to VAZ [Volga Motor Vehicle Plant], AZLK [Moscow Motor Vehicle Plant imeni Leninist Komsomol] and other enterprises. In this assistance we see one of the conditions for fulfilling the responsible task that was set before us to change to a new model.

[Question] Consequently, will output of the IZh-412 and IZh-21251 be completely curtailed by the end of the five-year plan?

[Answer] Not entirely so. It is more precise to say that output of the IZh-2126 will begin. Previous models will begin gradually to yield their place to it on the assembly line in proportion to the increase in new production capacities.

[Question] As far as we know, the IZh-2126 went a long way from the "Moskvich-412," the first model assimilated by the association. And in the future will the design development of AZLK and "IZhMASH" proceed along independent paths?

[Answer] We endeavored to retain reasonable standardization of the "26" with other models of our plant, but this is not always successful. We are standardizing it with Moscow's new model and with VAZ motorcycles in terms of individual running gear assemblies and electrical equipment and to a greater extent in terms of materials. We consider this fact as fundamentally important. Different motor vehicles are necessary--its own purchaser is found for each one. We

proceeded on the basis that a classical configuration did not confine itself to the engine located in the front and the drive gear on the rear wheels, so far as it has a number of merits. Traditional driving methods and assimilated procedures for determining and eliminating troubles (especially repair while traveling)--here are the main positive qualities of our configuration from the purchaser's standpoint.

[Question] Service by a firm has now become a generally recognized necessity. Is development of it being planned by your association? If it is, then when and on what scales?

[Answer] Today the "IZhMASHavtomototekhobsluzhivaniye" [IZhMASH Motor Vehicle Maintenance] Administration conducts only warranty repair, having at its disposal its centers in 155 oblasts, union and autonomous republics. Taking into consideration the latest decisions of the party and the government on expanding the network of services and improving the maintenance and repair of motor vehicles belonging to citizens, we will be involved with all seriousness in organizing service by a firm. A plan for implementing 1 million rubles of services has been established for us already for 1986, and by 1990 it will be brought to 2 million. These plans can be fulfilled only while developing our own service network with stations and warehouses. We will orient ourselves not towards gigantic centers, but towards small enterprises--towards two to three places. Appropriate proposals have been developed by us. As soon as they are approved, we will begin implementing them immediately.

[Question] One of the most serious problems of the present period of motor vehicles is the problem of spare parts. How will it be solved in your association during the 12th Five-Year Plan?

[Answer] Actually, the problem is most acute. But I must say that our association relative to spare parts of its products list is meeting demands completely. Complaints about a shortage of them either pertain to items being delivered by subcontractor enterprises or those caused by the trade enterprises' poor job of informing about demands and the products list of spare parts and by their incorrect distribution. This work requires further improvement.

[Question] In conclusion, allow me on behalf of the more than 4-million army of our subscribers, motorists and motorcyclists to wish success in fulfilling the quotas of the 12th Five-Year Plan and, of course, in putting the IZh-2126 and "IZh-Orion" on the assembly line in the most rapid manner.

[Answer] Thank you. We will try.

9889
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GAZ WORKS DELAYS IN MODERNIZATION, RETOOLING FOR DIESELS

Moscow IZVESTIYA in Russian 7 Jun 86 p 2

[Article by A. Yershov and V. Romanyuk, IZVESTIYA special correspondents: "Modernization...with Digressions: What is Keeping the Gorkiy Automotive Plant from Organizing Production of the Best Diesel Trucks in the World "]

[Text] It has been justly noted that each time has its own possibilities. During the current five-year plan, at the Gorkiy Automotive Plant they are facing modernization and retooling on a scale twice that during the 10th and 11th Five-Year Plans together. Formerly, some managers had their pretexts--they are not allocating funds, they said, and we have to work with old equipment. When there were failures, they again fell back on obsolete equipment. Moreover, the engineering services which were called on to update production were not given development within the workshops. In a word, there was some kind of closed circle, beyond which no one hurried to pass; why make extra worries for oneself? Moving a few paces ahead, let us say that by no means everyone has renounced the earlier view of modernization as some inevitable evil bringing much trouble with itself.

Modernization of the plant has long been pressing: during a half century, much of the equipment has become obsolete. On the whole, at the GAZ [Gorkiy Automotive Plant] the capital-labor ratio has been lower by a factor of 3 as compared with other plants in the industry. But the main argument in favor of radical renovation was the fact that it was impossible to solve the problem of designing a modern diesel truck while relying on yesterday's equipment.

The words of Ye. Parkman, deputy engineering director for retooling, came to mind. He formulated the sense of the new approach, which was affirmed at GAZ, thus:

"Formerly modernization was done on a narrow scale, affecting in essence only the main conveyor and rear-axle assemblies. They attempted to 'embroider the bottlenecks,' and they harped on the concentration of forces and funds in the most important directions. They set deliberately modest quotas, assuming that we could not drag out more. Psychological reorganization was needed. Now the workers of each section have a precise idea in concrete terms of what must be done today and tomorrow for modernization, what is the extent of their personal participation."

The acceleration strategy called for completely different approaches. Last fall we told about the renovation of a metallurgy plant where replacement of low-productive equipment with automated molding lines is under way at an accelerated tempo. And there is yet another decision of the metallurgists. It was impossible to install the next automatic line without stopping the casting work. Then the collective decided to restructure their work so that they could build up a half-year supply of ingots and then, without harm to the plan, shut down the section and completely modernize it during that same half year.

This time we visited shops making bodies and cabins, where they are preparing to produce cabins for the diesel truck. To this end it was decided to move the entire sector into a new building, for having once completed retooling within the old walls, it is constantly necessary to search out room for installing progressive equipment and pack it in among operating presses. In the large and medium die shops we saw foundation pits dug out to a third the span (of the building), and alongside these, thundering stamp lines.

"We are not waiting until modernization is carried out in the shops, but are actively taking part in it, making what contribution is within our powers," says N. Zakandyrin, head of the medium press shop. "In our shop nearly two dozen obsolete presses have been written off. Everyone has to work, as they say, for two. It's true that some of the parts -- edging for the cabin roof, door reinforcers and others -- have been moved to neighboring sectors. But at the same time, we are preparing the platforms for the automatic equipment."

How is this done under continuing production conditions? All earth work is usually done during the third shift when the overhead crane is free and the soil can be trucked out. The foundations have now been prepared for the new line. Its installation is to start soon. This line is single-purpose, having an automatic processor for stamping and placing the parts into a transport container. It is computer-controlled, and will be able to turn out 600-720 parts per hour, instead of the 300 produced on the old line.

In general, they got by without new platforms when organizing production of a progressive braking system: machine tools which were not being utilized to capacity were identified, and certain parts were assigned to back-up facilities. As a result, in just half a year facilities were set up to produce 100,000 brake systems, although the quota had been set at only 40,000 units.

"In our plant a special group has been set up whichis engaged in moving various underground mains like water mains, the heating network, telephone lines and the electrical network," said A. Zhukov, a fitter on the third truck assembly line. "There are still many jobs left to do in order to be able to outfit the new building next year. But there are areas where coordination is lacking: no crane on the platform, no transportation assigned and the like. We have to, let's say, bring in metal beams. A requisition is submitted to the administration at metallosnab [Expansion unknown; components indicate metal supply organization], but there are no materials. It is not right for suppliers to keep us on starvation rations, and all the more so now, when modernization should be in full swing. In general, the industry has not incorporated the output of equipment specifically designated for work during renovation. Much must

be redone, e.g. cut off truck bodies or shorten excavator booms. And these represent huge labor costs, a mass of non-productive time lost."

All of these are important problems, and they concern more than modernization of sites at GAZ. But there is one which worries the auto workers more than all the others: "What kind of plant will emerge from the modernization? And what of the diesel truck they will produce?" During a meeting of M. S. Gorbachev with workers of the city of Tolyatti, the following question was directly posed: why is the VAZ [Volga Automotive Plant] satisfied with the fact that their new vehicles will only be on the level of world specimens. Why isn't the question posed more broadly: how can we become a type of legislator of automotive style in the world? The Gorkiy auto workers are also asking themselves such questions.

We sat for a while in the spacious cabin of the diesel truck, rated the convenience of its seats, the comfort, the "inhabitability" of the cabin. There are already developments which look ahead to the 13th Five-Year Plan. A divided brake system, microprocessor control components and the use of lighter, stronger parts will all bring the diesel truck to the highest world-class level. The diesel vehicles of the first "limited series" are in experimental operation at key enterprises. At the same time that retooling is underway at the plant, improvement of individual units and systems for the truck is ongoing. And it is important in principle that the high technical level of the vehicle be founded on a base of the most improved, highly productive equipment.

The chief designer of the GAZ association, A. Prosvirnin, in a conversation with us lamented the fact that the development of engineering services is falling behind at the plant. A general decline is observed in the prestige of engineering work, including that of the designer. There are presently 60 designers in the truck design office, which is extremely few. True, the diesel tandem trailer truck was developed within the shortest of deadlines. Prosvirnin several times exphasized the fact that the diesel tandem trailer rig is on the level of the best foreign equivalents. But can we be satisfied with this today? Tremendous resources have been invested in the modernization of GAZ, and consumers are within their rights to expect equipment which would outstrip the best world-class models. To the credit of the auto workers, they are continuing to improve the tandem trailer rig. In particular, a more economic diesel engine is being developed, and they are looking for new tires, which, as is known, noticeably influence the (fuel) economy of the vehicle. Finally, they have posed the task of raising the service life to 350,000 kilometers. Other promising trends have been determined which will insure improvement in design of the diesel tandem trailer rig.

While organizing production of the diesel tandem trailer rig, they are calling for broad usage of such progressive technologies as power metallurgy (the use of power will increase from 1,500 tons to 10,000 tons); manufacture of almost 100 types of various parts will be converted from metal to plastic, and the overall use of plastics per vehicle will increase from 5.5 to 51 kilograms. During the implementation of the diesel truck, it will be necessary to double the output of accessories and improve its progressiveness. And this means to completely renovate the tool factory and the die and press-mold plant. Automated design, whereby the program goes directly to the lathe, is a good aid.

But to bring much of what has been planned to fruition successfully, it has long been needed to establish a scientific center at the automotive plant, based on the experience at VAZ, a center where qualified designers and manufacturing engineers could collaborate in the development of new, promising vehicle models and realize their ideas practically. The specifications for the new tandem trailer rig were submitted to the customer back in 1977. There have been many changes since then. And have the auto plant workers always been able to take the requirements of the day into consideration? They are planning to begin production of a diesel tandem trailer truck in 1988, and keep on improving it right here. Striving for renewal is praiseworthy, is it not more reasonable to provide the national economy immediately with a truly new diesel tandem rig which exceeds world standards?

This depends not only on the workers at the Gorkiy plant. Nearly 100 plants from 9 ministries are participating in production of the diesel. Some of them are actively working on improving their product. But, the problems linked to the production of heat-resistant rubber, rubber cork-like compound and parts made from a membrane cloth are being solved slowly.

As concerns the machine tool builders, in many cases they were not prepared to fulfill their own quotas. Let us say more: while incorporating the new models, certain plants incorporate into them parameters which are already obsolete. For example, at the Minsk broaching lathe plant, the weight of the lathe has been increased from 5.3 to 11.5 tons and the cost by a factor of 2.6, whereas the productivity has remained the same for the past 10 years. The Kharkov grinding machines plant has provided yet another surprise: the lines developed by them for GAZ contain 3 times as many machine tools as do equivalent Japaneese lines. This means that additional areas will be needed for the equipment, as well as machine operators above and beyond the number called for by the project.

Reconstruction has not touched everyone at GAZ itself. In order to finish with this topic, we will single out the forging and pressing plant, where they are obviously dragging their heels, waiting to see how to join in the reconstruction most conveniently so that everything might go without agitation and worries. By the way, this plant is one which lags behind in the technical sense. Is it necessary to say that the working conditions at the plant are far from the best? It is necessary to replace the old steam hammers with highly productive presses here, and do other things. But when will all of this be put into practice? And more importantly, how do they think they can reach acceleration in this collective? Unfortunately, we heard nothing intelligible on this point from V. Sokolov, the deputy administrator of production.

We are consciously directing attention to this moment. One cannot renovate one or two shops in order to achieve a high-quality final result. The rush must be strong, united. It is necessary for the initiative of the people not to stumble against a wall of indifference and departmental directions, but this happens. Since the start of the year, the GAZ collective has been shifted to an economic experiment, according to the terms of which the enterprise can utilize the production development fund independently as it sees fit. But Minavtoprom [Ministry of the Automotive Industry] withdrew this fund, and the directions for employing centrally allocated funds are strictly assigned.

We need to, as they say, untie the collective's hands, and all the more so since there is little time remaining: shipment of the first batch of the diesel tandem rigs to argicultural workers is being planned for 1988. It is important to reach a state where the plant, in its technical equipment, and the diesel truck, in its characteristics, are not on the world level, but exceed it. Such is the requirement of the times.

9194
CSO: 1829/276

WIDESPREAD QUALITY PROBLEMS IN LVOV-BUILT LIFT TRUCKS

Moscow VODNYY TRANSPORT in Russian 24 Jun 86 p 2

[Article by VODNYY TRANSPORT special correspondent V. Bezuglyy from Moscow and Kaliningrad: "According to the Manufacturing Process, but in Slipshod Fashion: Loading Trucks Are Being Produced in Lvov"]

[Text] Attention, V. Polyakov, USSR Minister of the Automotive Industry!

I'll say it straight away for the uninitiated: this is not the first year that not a single model 4014 or 4045 lift truck, or their modifications, manufactured by the Lvov PO [production association] "Abtopogruzchik," has been able to start working in port, as they say, "with a rush." They all have to be cured: one takes days; a second, weeks; a third takes months. Each one must be checked out, some assembly or other taken apart, and it is often the case that the whole machine must be repainted. And, of course, procure what they "forgot" to tighten, weld or put on in its regular place back in Lvov.

It has been estimated at Minmorflot [Ministry of the Maritime Fleet] that labor costs of the ports to eliminate the numerous defects in the manufacture of each machine and finish assembling the complete unit run 60-130 man-hours on the average. These figures, and, by the way, basic design and engineering shortcomings of the machines, have been brought to the attention of management at Minavtoprom SSSR [USSR Ministry of the Automotive Industry] and the "Avtopogruzchik" PO more than once by the management at Minmorflot. Our newspaper reported this 3 years ago in the article "From the Conveyor...to the Rejects" (7 Jul 1983).

However, little has changed since that time. Apparently, the same people having a direct relationship to the production of unreliable machinery have forgotten in which times they are living. They have forgotten that a radical

> change in the country's national economy started with the April (1985) Plenum of the CPSU Central Committee.
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> The enormous significance of carrying out a set of measures to improve production quality in all sectors of the national economy was stated at the June (1986) Plenum of the CPSU Central Committee. The problem of quality was set as a nation-wide challenge by the party.

The article "From the Conveyor...to the Rejects" started thus: "It was standing in the Kherson Maritime Commerce Port's Intraport Mechanization Garage. It was covered with scars and scorched places, as if following a fierce struggle with a fire. Electric welding seams and black blotches of burned paint literally left not a single living spot on the truck loader. The raised hood seemed like the jaw of an enormous mouth silently crying out in pain."

And it said farther along in the article that the loader was screaming because it was delivered to the port from the plant along with other powerless cripples like himself. That was why it had not been able to work even a minute on the wharves.

Each time we see such a gloomy picture of Kherson dock workers (it is also possible to write Leningrad, Arkhangelsk, Odessa, Nakhodka, etc. and still not change the essence), we are seized with indignation at the activities of the careless workers at the Lvov PO "Avtopogruzchik." The dock workers wanted to know, "Is there any workers' pride and conscience at that plant; is it possible that no one sees what is being done? And is there an OTK [Technical Control Division] there, popular control, a militant party organization?"

At that time V. Kulik, a fitter, said very caustically, but justly, "Okay, maybe you don't notice a bolt or washer in a cylinder, shavings in a wheel hub or that something hasn't been greased. But all the rest of this shoddy goods production offends the eye. Don't they notice? Or don't they want to notice, and are chasing after the plan, their welfare, and their product is a huge deficit, they take it without looking?

"It seems to me that the careless Lvov workers are not happy with their machines themselves. Who wants to see them? Out the plant gates with them! And from there, wherever God sends them. More and more ads about things are here. No way, paper can endure anything. One can't be stingy with promises: we admit it, we'll fix it, adjust it... And if there were a popular control, or even worse, the procurator's office? No problem; how many years fortune has been on our side! That's just it! We will hardly be living in freedom. A lot has turned up. Forward, to work: willy-nilly, willy-nilly....

"When work is in full swing, things are according to the manufacturing process, but willy-nilly, and we will go back to former years for a little while."

In September, 1983, suppliers informed MMF [Ministry of the Maritime Fleet] about work being done by the Lvov association to improve their product quality. In turn, Minmorflot informed their ports.

Alarming signals emanated from the ports. Like the following, for example: "Radio. Moscow. MMF. In the 4th quarter of 1983, 12 model 4014 lift trucks were received by the Port of Riga. Work quality of all of them was very poor: leaking brake fluid, all weld seams imperfectly made, poor paint. Nuts, washers and other metal items found in cylinders, crankcases and gear boxes. Electrical connections improperly made. Engines locked up. Leakage of hydraulic fluid reservoirs; different tilt cylinder rods; gears damaged in side the gearbox. There were no oil or gas settling tanks, heating units, lubrication in the wheel hubs..." Etc., etc.

Receiving such dispatches they shifted the battle for quality at Minmorflot over to an organized and systematic basis whereby numbers, facts would take precedent. After all, losses from full-restoration repair and down time for machinery which is imperfect in design and execution grew constantly and amounted to many tens of thousands of dollars of the people's money.

At the beginning of January, 1984, a circular letter addressed to all of the maritime shipping companies went out from the Ministry of the Maritime Fleet. The letter was headed "Measures to Improve the Quality of Lvov Lift Trucks." In it, in part, it said, "...by 1 March, 1984, we request that the company send, in generalized form, information concerning the following: technical status of the lift trucks received during the past 3 years; design and engineer-faults of the Lvov machines and suggestions for remedying them; manufacturing quality, reliability and actual service life of the lift trucks and an analysis of material from the past 3 years accounting for their breakdowns."

Having assured Minmorflot that effective measures would be taken from September, 1983, to insure the necessary lift truck quality, the Lvov PO's management calmed down. But as before, discomforting news came from the ports. Then, in April, 1984, a letter was sent to Lvov to the general director of the PO, Ya. Pidvalnyy from MMF, wherein it was stated in black and white: "A random quality check of lift trucks arriving at the Ministry's ports showed that (your) association has not taken adequate measures to improve their quality. The most characteristic shortcomings are low-quality assembly and deterioration of hermetic seal integrity. MMF again requests that you take effective measures to improve the quality of lift trucks produced by the association."

Since this letter, Minmorflot has introduced, if one can express it thus, "pressing full ahead" [Rus. 'pressing po vsemu polyu']. In April of the same year, L. Nedyak, deputy Minister of the Maritime Fleet, sent a letter to Ye. Bashindzhagyan, deputy Minister of the Automotive Industry. The letter asks the direct question: "How is the 18 Aug 1983 decree of the CPSU Central Committee and the USSR Council of Ministers "Measures to Accelerate Scientific and Technical Progress in the National Economy" coordinated with improving the quality of the Lvov lift trucks? Minmorflot," it goes on to say, "has systematized the most characteristic breakdowns of the model 4014 and 4045 lift trucks and identified their basic design and engineering flaws, a list of which is being sent to you so that you can take measures to eliminate them."

In an appendix to the letter, 37 (thirty-seven!) of these flaws and 11 (eleven!) of the most characteristic breakdowns of just two models of these machines were

set out precisely and clearly on 3 sheets! Is that not a lot? Well, those are just the "basic and most characteristic"! What kind of conscience and workers' pride and high party principles can you talk about here? In this very association, which is worth noting, they also make high-quality domestic lift trucks! This is apparently the screen which covers complete lack of responsibility and principle in the organization of production and quality control of machines "for general public consumption." It would seem that it is time for, if not the public procurator, at least people's control, to raise that screen.

In August, 1984, Minmorflot proposed that the shipping companies send the materials which they had summarized concerning lift truck quality directly to the PO in Lvov.

At the end of 1984, T. Guzhenko, Minister of the Maritime Fleet addressed V. Polyakov, Minister of the Automotive Industry, by letter. He wrote that the repeated appeals to the management of the 'Avtopogruzchik PO on the part of the ports and shipping companies yielded no positive results. And this was in spite of the assurances of the PO that, starting in September, 1983, the quality of the machines should improve. However, they are delivering lift trucks with factory defects which recur from year to year, as was the case earlier. Guzhenko requested that the PO in Lvov be ordered to cease production of machines with defects and also that Minmorflot be informed about measures to improve the technical level of the lift trucks.

It would seem that after such a sharp, fair letter, Minister Polyakov would take immediate measures to intercept shoody goods at the plant and inform MMF how they would be improving machine quality in Lvov.

And they were informed; to the two letters of the heads of Minmorflot, T. Guzhenko and L. Nedyak, came two responses over the signature of deputy Minister of the Automotive Industry A. Butuzov.

In their essence, they may be combined and considered as a united whole. What is the most important thing? The standard promise:

"By order of the VPO [All-union Production Association] Soyuzavtobusprom dated 1 July 85, No. 3, beginning 1 March 85, departmental inspection of the assemblies, parts and model 4014 lift trucks in general is being instituted at the Lvov specialized lift truck plant of the 'Avtopogruzchik' PO with the aim of stabilizing quality and making control of the manufacture of model 4014 lift trucks more strict."

Further on in the replies, it mentioned that a consumers conference had been held, and that data from user organizations, including enterprises of the maritime fleet, had been utilized in the work of the conference...Termination of production of the obsolete model 4045R lift truck was planned for 1985, along with the manufacture of an experimental-industrial batch of model 4085 lift trucks, series production of which is to begin in 1986.

Having become acquainted with these promises and proposals, one can only greet them. But, as is known, it is a long way from the desired to the actual. We now yield the floor to our maritime commercial ports:

Kherson--Act dated 20 Sep 1985. A commission examined 4 model 4014M lift trucks, manufactured in July, 1985. Flaws: cracks in the main engine manifold, in the hydraulic panel body and in the engine crankcase; no bearing lubrication; leaks in the fuel tanks and the braking and hydraulic systems; steering column locked up; no exhaust pipe with muffler, etc.

Leningrad--Extracted from materials concerning lift truck quality. In 1985 the port received 12 model 4045R and 9 model 4014M machines. Their quality has not improved. All had flaws. The hydraulic, electrical and braking systems had to be reassembled. The lift truck's frame had to be rewelded. On 14 of 21 machines, the hydraulic fittings were in unsatisfactory condition. For half of the lift trucks we found damage of the glass finish and an incomplete set of tools, spare parts and documentation.

Nakhodka--Act concerning the technical condition of lift trucks arriving in July, 1985. Quality has become worse. Flaws: steering axle gaskets ruptured, too little lubrication in the hubs themselves, no ignition keys. Cabins not tightened down on all machines, hoods do not close; many assembly and part fastenings are either weak or were not provided at all; casting cracks. Some standard parts missing, etc.

Pevek--Act of 11 Sep 1985. Examined 4 model 4014M lift trucks. Factory defects: electric wiring and many parts and instruments poorly fastened; worthless cabin door and window seals. Working units do not turn on; window glass painted over, etc.

This list could be continued.

Minmorflot announced to Minavtoprom that they would continue to be checking lift truck quality, and that the director's offices would be informed in the event of negative results.

So what? Such an arrangement conforms completely to the decisions of the 27th Party Congress: One must struggle uncompromisingly to accelerate scientific and technical progress.

In preparing this article, we selectively asked our own correspondents on site to describe briefly the situation with regard to quality of the Lvov machines today; this was done in the interests of reliability. We got reports from the maritime ports in Leningrad, Murmansk, Riga, Ventspils, from the river ports in Leningrad, Krasnoyarsk and Arkhangelsk and from the Far Eastern Maritime Shipping company. There is a unanimous conclusion: the situation has almost not changed for the better. This is why they decided at the Murmansk maritime port not to accept more of the Lvov machines without representatives...people's control!

Also, in the interest of things, I visited the Kaliningrad maritime commercial port. They had the same problems there: composing official acts, disassembly, assembly, check-out, painting, looking for spare parts and standard instruments.

...Our conversation with group mechanics of the port's comprehensive production mechanization unit A. Forostetskiy and A. Klimchuk took place near a monument

of sorts to the Lvov schlock-workers. This was model 4014M lift truck #7491, received last May. There was so much missing from it, so many defects that the mechanics had not been able to put it to work for over a year!

"We feel," said the brigade workers, "that the most painful spot with these machines is the hydraulics--the pump, the power steering, the distributor. There have still not been any improvements here. Assembly of sub-units can be called conditional: things are not always tightened down, and it is done hastily. Bolts are driven in with a hammer, there is nearly no lubrication. Maybe they are conserving it? The paint peels like leaves in a stream of air. The hydraulic cylinders are not polished, and you get friction, and the rubber is eaten away everywhere there is sliding motion."

The brigade workers finished their conversation thus: "Things on lift trucks not made in Lvov still work, but on theirs...trouble!"

It can't be said more clearly and concisely!

In conclusion, let us look at the kinds of machines that are being planned for our dock workers of tomorrow. Unfortunately, there is nothing to be happy about.

In April of this year deputy Minister of the Maritime Fleet A. Glodobenko sent a letter to the deputy Minister of the Automotive Industry A. Butuzov. It said, in part:

"A 'Standardization of Lift Trucks for Public Use for the Years 1986-1995' has been developed by the Main SKB [Special Design Bureau] (GSBK) for Lift Trucks of USSR Minavtoprom and submitted to Minmorflot for approval. We have often called the attention of the GSKB to the necessity of improving manueverability characteristics, reducing the structural height, increasing the rated lifting height of the lift fork and developing machines which can compete with the best world models. The lift trucks which are proposed for production until 1995 are already obsolete and meet requirements neither for lifting range [Rus. 'po gruzopodemnomy ryadu'] nor for technical characteristics. In accordance with that set out above, the Minmorflot cannot approve the standardization."

FROM THE EDITORS--Our newspaper has spoken out a second time on this most important topic. It will continue to monitor the given problem.

9194
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RAIL SYSTEMS

PRODUCTION LAGGING AT KALININ RAILCAR WORKS

Moscow PRAVDA in Russian 4 Aug 86 p 1

[Article by A. Yegorov, part-time PRAVDA correspondent, city of Kalinin: "It Has Lost Its Former Glory"]

> [Text] One day, the Kalinin railcar builders released through the gates of the enterprise dozens of all-metal railcars-- as many as should have been produced during a 10-day period at least -- victory reports on this occasion, however, did not follow....

This modesty as simply explained. The record indicator arrived on the thirty-first -- moreover on a day off when the people should have been resting. The speed, with which the plant arrived at the finish line, had to compensate for the somnolence and rocking during the first two 10-day periods.

Such an event, unfortunately was no exception. All hands jobs are frequent in the production life of a collective. A factory, of course, cannot work normally with such a lack of smoothness. Complications in the production of rail cars strike all shops and sections and slow down delivery contracts.

V. Savin, the deputy director of the association, lists the objective -- from his point of view -- reasons for the failures. Here, there is an absence of technological stocks, logistics deficiencies, the diversion of people to agricultural work, and a lack of discipline on the part of the suppliers of the raw materials.

However, are all these reasons "objective"? Who, for example, is preventing the enterprise from insuring technological stocks? These completely depend on the organization of labor -- and you would not call it normal here. The reference to agricultural work is also a lame excuse. All told, 200 people from a collective numbering 12,000 worked at the time mowing hay. It is necessary to add that there are approximately 200 people in the plant above the planned number of production personnel. It is a sin for the giant, which has a multimillion-ruble fixed capital and a large staff of highly qualified engineer and technical workers at its disposal, to complain about logistics support. Only the interruption in deliveries of raw material can be related to objective reasons.

Vladimir Ivanovich explained the breakdown in contract deliveries also by the fact that a plan, which provided for a too large increase in production, had been established for the association. Of course, marking time or rolling along a well-trodden high road is easier than climbing a mountain. The illness of the Kalinin association, however, was not acquired today.

The flagship of passenger railcar construction, as the people of Kalinin love to call this enterprise on festive occasions, has lost its former glory. It did not lose it accidentally. Effective and high quality work cannot be assured without systematic technical re-equipping, the introduction of modern technologies, and raising the qualifications of personnel -- but the flagship is aiming at working in the old way. The railcar builders have the highest level of manual labor among the city's machine building enterprises-- it is 45 percent. Here is a typical example. More than 30 tons of various parts must be brought manually to each railcar during assembly. The plant and the railcar building scientific research institute's branch, which -- incidentally -- is located there, have not been able to develop and introduce large-casing assembly for two decades.

The brake shop has long had the reputation of being the worst. It has the highest turnover of personnel. The reasons for this are clear to everyone. Heavy work and poor working conditions do not suit people.

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PLAN FOR MOSCOW METRO'S LYUBLINSKIY RADIUS ROUTE PROGRESSES

Moscow TRANSPORTNOYE STROITELSTVO in Russian No 9, Sep 86 p 62

[Unsigned announcement: "Chronicle: In the Scientific and Technical Council of the USSR Ministry of Transport Construction"]

[Excerpts] The Subways and Tunnels Construction Section has evaluated and recommended approval of the technical and economic justification for the Moscow Metro's Lyublinskiy Radius from the Kurskaya Station to the Lyublino Station.

The Lyublinskiy Radius will be part of the Lyublinsko-Dmitrovskaya Line, which will connect, via the city center, the northern and southern areas of the city.

In order to determine the optimal route alignment, the base documents compared five different solutions. The route alignment confirmed as most expedient for further development is a line running southeastward from Kurskogo Vokzala Square.

The section between the Kurskaya and Sharikopodshipnikovskaya Stations will be at a deep level, and the section between the Kozhukhovskaya and Lyublino Stations will be at a shallow level. It is envisaged that the stations will have island-type platforms long enough to handle eight-car consists. The deep-level Kurskaya, Ploshchad Ilicha, Proletarskaya and Sharikopodshipnikovskaya Stations will be of the column-pillar and pillar types, whereas the shallow-level Kozhukhovskaya, Pechatniki and Lyublino Stations will be of the column and single-vaulted types.

The deep-level stations, tunnels and connecting spur must be bored and lined with poured concrete; the shallow-level stations and tunnels will be constructed by the cut-and-cover method.

In the technical and economic justification, it was recommended that the start-up section design development include the 7.1-kilometer segment from the Kurskaya Station to the Sharikopodshipnikovskaya Station, including three deep-level stations and a connecting spur to the Kalininskaya Line. Construction of the Proletarskaya Station and the transfer point at the Ploshchad Ilicha Station were delayed until some point in the future.

Taking into account, however, that operation of the line would be difficult without the completion of the Kurskaya Station transfer point and the car yard beyond the Pechatniki Station, and that the construction period for these facilities will

exceed five years, it was recognized as more expedient to develop a start-up phase of construction to include an 11.25-kilometer line from the Kurskaya Station to the car yard past the Pechatniki Station. Within this start-up phase, the 4.9-kilometer section from the Ploshchad Ilicha Station to the Sharikopodshipnikovskaya Station is designated for completion before the end of the 12th Five-Year Plan. Work on the Kurskaya Station transfer point and the car yard will be initiated during the current five-year plan by applying the capital funds previously allocated for a 7-kilometer start-up segment of the line.

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NOVOSIBIRSK METRO TRACKLAYING DIFFICULTIES NOTED

Moscow GUDOK in Russian 12 Aug 86 p 2

[Article by A. Inozentsev, deputy chief of the subway and honored RSFSR builder: "The Subway Route"]

> [Text] The first Siberian subway has started operating in Novosibirsk. The trains are travelling exactly on schedule. The construction of new stations and sections is taking its normal course and lessons are being derived as to what is clearly not suitable for Siberia.
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> The article, which is being published, talks about one of the subway problems.

A subway is the same as a railroad, only it is built under the ground. The rest, as they say, is only a detail. Since my profession is a railway engineer, they are talking about "my" job. The task is now finished; it seems to me that the builders somewhat underestimated the complexity and amount of work in laying the track. They said that the main thing would be the tunnels and, yes, the stations; however, to lay the rails.... That is why our participation share in the track work became known only one and a half months before the commissioning of the subway. It was said: "Allocate 35 qualified railway engineers to help." All told?

Literally after a few days, however, it turned out that it was not necessary to help but to assume on ourselves the track work completely. Not 35 but approximately 200 of the best specialists from practically all of the railroad's subdivisions worked on the subway. Our specialists developed the production work operating schedules. For some items, the task was a new one for us and we had to spend time studying the questions. Generally speaking, we worked excellently and we handed over the rails on 24 December -- three days before the test running of the trains. Six months have passed and the operators of the subway have no claims against the railway engineers.

I will briefly mention the amount of work and the distinctive features so as not to create the impression that the subway tracks were laid in prepared tunnels -- that the job was trivial and quick. I will point out that rails of the heavy R65 type and -- moreover -- case-hardened, were laid in Novosibirsk

for the first time in the practices of our own Moscow Subway Construction Administration. This, of course, is good; however, it is very difficult to drill them. There is no special tool and it takes a long time using a standard one.

I was entrusted with directing these operations, and there is the exact number of holes, which were drilled in the rails, in my notebook -- 6,312! Yes, and another 30,000 holes in the ties for wood screws. There were sufficient, but the subway builders had no electric drills. They began to collect them by ones and twos from the railroad's subdivisions. They collected them but it turned out that there was nowhere to plug them in. Let's make an electric supply set-up. All of these items were underestimations in the track work.

Now, the distinctive features. What is the difference in track work in a subway and on the surface? If you had asked me this during the summer of last year, I would not have answered -- or would have said that there is none. It turned out that it was a very enormous one! The work frontage has actually one linear measurement: not up, not to the side, but only to the front! Well, correspondingly to the rear also. However, back means to meet everything that is coming forward. That is why a special subway production work operating schedule is required.

The production rails were laid during the construction of a tunnel. The following engineering process was proposed: These rails would be removed, dragged to the surface, welded into ribbons (in a subway, they exactly coincide with the block sections of the automatic lock-out feature and that is why they are all different in length), and laid again. When doing this, there is not a meter of transition allowance -- and time is pressing. At the time, we took our own rails in order to speed up the work.

There were many advisors. They suggested welding them in the tunnels. But with what? There are no rail welding machines of that size. Generally speaking, subway railway engineers and builders do not have any equipment -- neither track layers or aligners -- everything is manual. I remembered my track-laying youth of 40 years ago: "One-two-pick it up!" On the surface, we now have equipment of many types although we also grumble: "Let's go again." But for subway engineers it was yesterday.

Yes, we managed on time. But at what cost? You see, they are continuing to build the subway in that same Novosibirsk. And they are not halting the construction of them in another 11 cities. New ones -- Omsk, Krasnoyarsk, Riga, Rostov, and Alma-Ata-- lie ahead. Will they resort to an all hands job everywhere with respect to laying the track? Will the time for capital repairs arrive?

I can even conjecture why there are no mechanisms for track work in the confined sizes of subway tunnels. The client is timid. Again because of underestimations in the amount of work and out of habit the railway engineers will help at the difficult time -- the same department.

Machinery is required. A complete set. It is not necessary to "invent the bicycle"; only a small modernization of existing equipment and its adaptation to the dimensions of a subway and to the distinctive features of working under the ground are required.

I at first thought: We already have many subways. It is necessary to solve this task of mechanizing track operations at each one without delay. This is from one viewpoint. But I then look at this from another-- from an economic viewpoint.. Well, the track is laid but what then? Stand and wait until new tunnels are ready -- but this is a year as a minimum and often two or three. What to do?

Here is a proposal: Form a central mechanized column from this equipment -- or two of them. It is necessary to calculate. And then "coordinate" the track work schedules for the country's subway systems. When the time has come to lay the track, go there. The sections under construction are usually 5-10 kilometers. This means that the work of such a column will take a month at the maximum if the work is well organized.

Incidentally, centralization will surely "kill a second rabbit" -- knowing the schedule and not feeding the illusion of an assault. The subway builders will work more accurately, and precision and accuracy in periods always guarantee engineering discipline and, in the final analysis, quality.

Proposals to mechanize track work in subways can be very diverse. However, the time has come to solve these tasks -- there is no doubt of this -- because the number of subways is growing. The Siberian experience in commissioning the line on the eve of the new year confirmed that it was not the best time to complete the work. When common sense triumphs and the commission periods are transferred to the warm season, they will coincide with our, the railway engineers, peak repair work and we will hardly be able to provide such forced help.

Thus, the task of mechanizing track work in subways exists and must be solved.

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CHIEF ON NEW RAILROAD RESTAURANTS MAIN ADMINISTRATION

Moscow GUDOK in Russian 5 Sep 86 p 2

[Interview with K. Khvesin, chief of the Railroad Restaurants Main Administration of the Ministry of Railways, by S. Smirnov, GUDOK correspondent; date and place not specified]

> [Text] The Railroad Restaurants Main Administration has been established in the Ministry of Railways. The conversation of S. Smirnov, our correspondent, with K. Khvesin, the chief of the new main administration, is recommended to our readers' attention.

[Question] Konstantin Nikolayevich, what caused the appearance of the new main administration?

[Answer] It is still a little early to speak about its appearance in the full sense of that word: We still have no staff nor material technical base. There is only a group of specialists who are engaged in organizational questions. The main administration is being established for only one purpose -- to improve the dining of passengers on rail transport. It was literally only yesterday that the public catering workers and the railroad workers were not connected by a common task although they were located, as is said, under the common roof of one structure. Possessing dining cars and a production base for their technical support, the Ministry of Railways did not have responsibility for organizing passenger dining. It is now its direct responsibility. That is why the directors of dining cars will be subordinate to the chiefs of the trains.

The fact that all public catering enterprises on rail transport will now be supplied with food centrally under the control of our main administration and from funds allocated by the union republics, is also extremely important. Previously, many masters existed -- from the Ministry of Trade to local trade organizations. As a result, the public catering enterprises were not always supplied with products -- it must be admitted! -- in sufficient quantity. There were cases where individual trade organizations refused in general to supply trains passing through.

[Question] You said that there is still no staff nor material technical base ....

[Answer] More than 6,000 public catering enterprises are being transferred from the RSFSR Ministry of Trade system to the authority of our main administration. These consist of railroad restaurants, cafes, dining halls, buffets, and snack-bars with all their small retail platform network, line buffets, preparation and confectionary workshops, depots, fruit and vegetable warehouses, auxiliary farms, and motor vehicle transport assets. Training and course centers, preparation factories, and 2,500 dining cars will be included.

A two link system for managing public catering is planned instead of the previously existing three-four link one: The main administration will go directly to railroad restaurant associations (trusts). We will establish 27 of these associations and trusts on the network. They will be operationally subordinate to the deputy chiefs of the roads for passenger traffic.

All told, 93,000 individuals have come to our system from the RSFSR Ministry of Trade; 25,000 of them were dining car workers. The annual trade turnover is 1.48 billion rubles.

We must first staff the new administration with personnel as rapidly as possible, establish associations and trusts on the roads, and accept the public catering enterprises from the RSFSR Ministry of Trade in the shortest possible time.

[Question] What is being specifically planned to improve passenger services? You see, the editorial mail most often brings complaints about the poor quality of food preparation, the monotony of the menu and the rudeness of workers in public catering.

[Answer] First of all, we will introduce advanced forms of service -- for example, the sale of inexpensive complete dinners, soft drinks and juice through vendor sales; the acceptance of advanced orders for the delivery of hot dinners to the compartments of firm and express trains; and the organization of (self-settlement food tables).

Dining cars will be supplied to a much greater extent with foods that have been highly prepared and quick frozen dishes. We intend to build for this purpose a number of specialized railway supply bases, preparation factories and production workshops in Moscow, Volgograd, Aktyubinsk, Vologda, Kuybyshev, and other large railroad hubs.

We are providing for cooperation with the food industry in order to obtain dry potato grist, soup concentrates, soup and borscht preparations, canned vegetables, and also goods in small packages -- jams, sugar, pastry, butter, cheese, sausages, ...

Supplying each passenger with hot food is a big problem. You see, there are usually up to 900 people on a train and there are only 48 seats in a dining car. We see the solution to lie in replacing old design dining cars with new ones where cafes, which really use the self-service method, are set up. This will permit an additional number of workers to be released for delivering hot food directly to the cars. An opportunity will be presented to increase platform and car sales.

It is necessary to see to it that yesterday's public catering workers now feel themselves to be completely equal with the workers in rail transport and personally responsible for the quality of now servicing his passenger. The introduction of new material incentives will undoubtedly contribute to this -- for example, such as an additional payment of 35 percent for night work and a daily increment in the amount of three percent of the monthly pay rate for the travelling nature of the work. The overall annual amount of these additional payments is not small -- it is almost four million rubles.

In a word, a fundamental reorganization will take place in passenger services. Millions of people, who use the services of rail transport, will judge its results.

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SCIENTIST SUPPORTS NEED FOR AIRSHIP R&D COORDINATION

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Aug 86 pp 1-2

[Article by S. Yeger, head of the Aircraft Planning and Design Department of the MAI [Moscow Aviation Institute imeni Sergo Ordzhonikidze], corresponding member of the USSR Academy of Sciences, Hero of Socialist Labor, winner of the Lenin and State Prizes, and Honored Scientist and Technologist of the RSFSR: "An Airship on Departmental Routes"; a translation of the article to which this item refers can be found in JPRS-UTR-86-017, 20 August 1986, pp 90-94]

> [Text] How do we deliver freight, including assembled oil rigs and prefabricated houses, to the regions of Siberia and the Far East that are not easily accessible? For the present the problem is insoluble. But grandiose operations will be developed here one of thes days, you know.
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> Scientists are proposing a promising and economical form of transportation for this. But the Ministry of the Aviation Industry and its subunits are impeding the work.
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> The discussion about fundamentally new means of transport begun by Academician N. Cherskiy on the pages of SOTSIALISTICHESKAYA INDUSTRIYA on 7 June this year ("The Helistat, Thermoplane, and Others") is continued by S. Yeger, head of the Aircraft Planning and Design Department of the MAI [Moscow Aviation Institute imeni Sergo Ordzhonikidze], corresponding member of the USSR Academy of Sciences, Hero of Socialist Labor, winner of the Lenin and State Prizes, and Honored Scientist and Technologist of the RSFSR.

Addressing a conference of the active members of the Khabarovsk Kray party organization, M. S. Gorbachev again focused attention on the need to introduce new technologies. The search for such technologies to develop Siberia and the Far East, and primarily the means to deliver items with a higher degree of prefabrication to the place where they are be installed, and hence a fundamentally new form of transport, is under way in our institute. It should have properties such as these: a carrying capacity of several hundred tons, the ability to manage without airfields, and the capability of flying not only at low speeds but hovering, and of performing crane installation work.

Essentially this involves the creation of a transport and engineering system which makes it possible not only to deliver loads "from door to door," as they say, regardless of the terrain and weather, but to install items with a higher degree of prefabrication. Only elements of this system exist today, and the further it is developed, the more refined it becomes, the more we are clearly aware of the gap, the missing link.

At first we studied airplane technology. But it does not meet one of these requirements. We even examined a half-fantastic version such as a giant superliner weighing 1,000 tons and capable of delivering 500-ton loads, which the TsAGI [Central Aerodynamics Institute imeni N. Ye. Zhukovskiy] suggests.

Technically, probably, such an aircraft can be built. But operating it?! After all, a large number of airfields with the strongest runways must be built, which is practically out of the question under conditions in Siberia, especially Eastern Siberia, which is nearly entirely covered with mountains. We believe that the airplane version, at least in the foreseeable future, is not the solution.

We have also examined helicopters. Airfields are not needed to base them, and what is very important, helicopters can also be utilized for crane installation operations; in a word, they seem to meet all the requirements. Except one: it is unlikely that we will succeed in developing a helicopter with a load capacity of over 100 tons by the end of the century. So this branch of the search is also a blind alley for the present.

The only form of transport today which is capable of resolving the problem of delivering and installing superheavy and large-sized loads is the aerostat: airships on a new technical basis and hybrid aircraft. In principle, airships can lift loads of practically unlimited weight. But a problem of immense difficulty arises--controllability, holding the airship in place in a strong wind. A nearly instantaneous response by the control system is required with the aircraft's high degree of inertness.

In theory, we have found the solution to this problem. In the course of 10 years of research the collective of developers came to the conclusion that a disk shape, not the classic cigar shape, is the best for a superairship. This makes it possible to achieve high load capacity with relatively small linear dimensions. For a 500-ton airship, let us say, this is a diameter of 200-220 meters.

We will not go into the technical details. They have been studied at length by skilled specialists of the USSR Academy of Sciences, who have concluded that current scientific and technical potential makes it possible to develop such a craft.

Naturally, there is no sense in building such a huge thing right away. For a start, obviously, it is advisable to make several experimental models, reduced to one-fifth scale, let us say, to work out all the operating and technical problems.

We have received support from all the interested ministries--the potential users. Only the department which ought to be interested in this craft first of all--the Ministry of the Aviation Industry--has disapproved. For many years now it has been opposed to airship construction--both the classic and the new types, both the heavy-load and the small configurations.

I think the reasons for such a situation were persuasively set forth by Academician N. Cherskiy in the article "The Helistat, the Thermoplane, and Others." The sector has been oriented traditionally toward the manufacture of airplanes and helicopters, and is working under pressure. And under these conditions, leaving the track it is on and setting up new production...

And so that they are not accused of retrogression and lack of attention to the new offshoot of air transport, they resorted to a diversionary maneuver here--they set up an airship group in the design bureau. And by using this as a cover, they are waging a struggle against airships, not for them. The impression is created that the Ministry of the Aviation Industry is trying to establish the appearance of vigorous work, not develop an efficient aircraft. The fruitlessness of efforts by the design bureau collective, to which the USSR Ministry of Power and Electrification at one time transferred a specialized subunit, suggests this idea. Working in a nonspecialized ministry, its staff members developed a 6-meter flying model of a transport and installation craft over a short period of time (it was demonstrated in the USSR Gosplan as early as October 1981), and designs of 3-ton, 8-ton, and even larger cargo-carrying airships. But in the specialized KB [design bureau] of the Ministry of the Aviation Industry, they haven't been able to develop two 2-ton designs in 5 years, and the end of the work is not in sight at this time.

The conference on problems of developing aeronautical technology conducted in the editorial staff of SOTSIALISTICHESKAYA INDUSTRIYA made it clearly obvious that the Ministry of the Aviation Industry and its main scientific research institute are stubbornly confining themselves to just the airplane-helicopter transport and engineering configuration, without leaving a place in it for airships. But in the final analysis, it makes no difference to the consumers what means are used to transport large-sized loads. They need a means of transport. The Ministry of the Aviation Industry cannot offer anything workable in the traditional forms of transport, and it does not want to involve itself with nontraditional craft.

The former chief of a main administration of the Ministry of the Aviation Industry, V. Leontyev, and his successors in that position, L. Shkadov and A. Batkov, have done a great deal to persuade higher organs that airships have no future and that they are not seriously involved with them abroad, and for that reason, they said, there is no need for us to undertake this complicated work and throw money to the wind.

What the calm in the Ministry of the Aviation Industry's "thorn" has led to is already apparent to the naked eye. In truth, an airship renaissance is being observed in many industrially developed countries, and dozens of lighter-than-air craft are in operation. As an example, they are being used in the United

States to patrol a 200-mile zone along the Atlantic and Pacific coasts and for other needs. A decision was made recently to purchase a large consignment of airships for military purposes, for which billions of dollars were released.

It is doubtful whether it is relevant to speak of any occasional miscalculations in the technical policy of the Ministry of the Aviation Industry. A barely concealed, premeditated disregard for a promising trend is present which is being promoted by the current monopoly of general producers of aircraft and their main institutes, which have the right to "veto" any objectionable areas for development.

This could not be if the GKNT [State Committee for Science and Technology] pursued a state-oriented technical ideology based on principle, and not one favoring a sector. After every favorable conclusion by the Gosekspertiza [State Commission of Experts] of the USSR Gosplan, "counterbalancing" commissions were organized at the initiative of N. Shinkarev, chief of the Transport Department of the GKNT. They were chaired by Academician G. Svintsev, head of the TsAGI [Central Aerodynamics Institute imeni N. Ye. Zhukovskiy], who invariably reached exceptionally unfavorable conclusions on airships. Both the commission members and the managers of organizations interested in the new means of transport pointed out their unnecessarily categorical nature. Nevertheless, an impassable barrier was erected from these conclusions.

I believe there are serious grounds for examining the situation that has taken shape on the state level.

It cannot but disturb us that our country, which at one time achieved world records for airship flight endurance, has none of these aircraft today. Decisive steps should be taken quickly to revitalize airship construction. And to launch experimental models of the most diverse types first of all, in order to determine the most promising craft, the time periods and the stages of operation.

I think that experimental operations should be conducted under the supervision of a unique council of directors--representatives of the consumer ministries concerned. The working technical groups--temporary creative collectives which airship construction enthusiasts, the creators of different designs, will be sure to join--ought to be subordinate to them. The Ministry of the Aviation Industry, by directive, ought to provide them with complete units of items--aviation materiel.

When the question of series production of lighter-than-air craft arises, possibly it will be required to establish a specialized center for airship construction, perhaps even an NPO [scientific production association]. Such a center existed in the 1930's, incidentally--the "Dirizhablestroy." In less than 10 years it put 13 large airships in flight.

There should not be a monopoly here. It is necessary to develop construction of experimental models of different types of airships and hybrid craft in the coming years, to test them, and to begin development of the full-sized aircraft without delay. The USSR Academy of Sciences also supports the same view, incidentally.

Fruitless discussions about whether there will be airships or not are useless. They cannot be launched in a paper vortex. Airships are straining to reach the sky. And they must be freed a little more quickly from the ballast holding them at the mooring anchor.

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